[Year: 2007]

CHARACTERISTICS OF RIVERBANK INFORMAL SETTLEMENTS IN ADDIS ABABA

The case of Great Akaki River

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PREFACE

This paper is to fulfill partial requirement of master degree at Department of Urban and Regional Planning, Graduate studies in Urban Design and Planning, Addis Ababa University Faculty of Technology.

The research has been focused on the riverbank informal settlement at Great Akaki Riverbank. The primary aim has been to get understanding why people are attracted to settle informally on riverbank area, and assess the level of environmental degradation caused by different elements. Thorough study has been made how to bring inhabitants to the forefront of current dynamic city development and keep the natural environment. Lessons have been drawn for improvement of the formal process and future integrated housing development.

The assessment and the findings may contribute to the understanding of why people get attracted and are forced to live and work in such peculiar areas, and show the physical and environmental conditions of riverbank areas, as well as give a clue for the current informal land transaction. The conclusion indicates that this secluded part of the society should not be neglected; instead they have to be integrated to the present urban housing development as per the international arena enabling approach “home for the homeless”. This paper enables to understand the magnitude of urban poverty and housing shortage in the city, beyond that it provides preliminary guidelines for systematic way of tackling livelihood, housing shortage and combat environment pollution.

We human being wanted to live and work in an appealing atmosphere legally and respectfully. Nevertheless, in developing country due to innumerable reasons most of the time things are going out of the track. Especially from few years on ward since the level of poverty reached at the climax level massive influx of people in need of shelter unwillingly were forced to live in uncontrolled government land. It is important to know that no one would like to live under illegal circumstances and bad houses unless some restrictive conditions does not allow him to live. It is any one informal riverbank settler’s prospect one day they may be recognized by the city administration and considered as city inhabitants. The government should entertain informal settlers and create conducive environment to avoid informality from the grass root level.

ACKNOWLEDGMENT

I extend my deep gratitude to large number of people who have made this research possible. This research represents the outcome of successive studies, professionals' advice, instructors' guidance, participation of individuals, and endless effort of my immediate supervisor Dr.Ing. Wubshet Berhanu. Again, I would like to express my indebtedness to my supervisor his valuable advice, suggestions, comments, guidance, and unique passion helped me to perform this research at this stage

I am indebted to Urban Design and Planning instructors Dr. Ashenafi Gossaye, Dr Fisseha Wegayehu, Prof. Gurdeep Singh, Mr. Timothy Stewart, Mr. Abrham Workneh valuable comments, and assisting in all circumstance.

I would like to tank the staff of the Addis Ababa City's Urban Preparation and Control Department head Ato Ephreme Bekele, Ato Tamrat Eshetu Masters program student, Ato Temesgen Haile Georgis. My appreciations also go to Ato Zewde Mamo Kolfe Sub-city Manager and Ato Wondwosen Demirew Addis Ababa Housing Department Head for providing appropriate information and relevant documents of the city. I would like to thank Addis Ababa City Administration, Federal Urban Planning Institute and Building College librarians for their kind cooperation and dedication. Moreover, I am indebted to Ato Gettu Yirga secretary of Mekanissa-Furi and Saris vegetable growers association, Ato Muzeyen Mohamed head of Kolfe Selam Ber vegetable growers, 'and Ato Alemayehu Terfa agricultural expert of Akaki-Kality Sub-city Agricultural Office for assisting and providing available information during my field work.

This research would not have been possible and reached at this stage without full participation of riverbank settlers, Kebele officials, sub-city managers, law enforcement bodies, health officers; Addis Ababa Environmental Protection staffs and some related government employees let alone to finish. Particularly I am indebted to Sore Amba and Amrachoch and Gurage sefer informal settlers for telling me their real life and fear of government policy. I am also greatly indebted to Tewedros Belihu his determination to stay with me while I conducted field work. He has been assisting throughout the days and encouraged me persistently to finish the site work. I am thankful to Dr.Terefe Degefa his remarkable advice has helped me to shape up the overall study.

Eventually, my extraordinary thanks go to my family and all my friends. My wife Kidest Helawe has been helping me without any reservation. Her valuable advice and support both at home and site allowed me to execute my research properly. My children, Kalikidan and Birutawit, deserve particular appreciation for their patience during my long stay out of their reach and for this I owe them a lot in the time ahead.

Above all I know this has been possible by the grace of Almighty-my lord God who has been kind enough to bless me to come to the present level.

Addis Ababa, Ethiopia
Oct. 2007

Berhanu Mekonnen Workie

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYM

AAU……Addis Ababa University
AALEPO……All Africa Leprosy Eradication Program
AFCPO……..Addis Ababa Flood control and Protection Office
AAMPPO …….. Addis Ababa Master Plan Project Office
AAWSA……Addis Ababa Water and Sewerage Authority
EC……..Ethiopian Calendar
EEPCO……..Ethiopian Electric Power Corporation
ELICO……Ethiopian Leather Industry
FTA……..French Technical Assistance
GSS……Global strategy for shelter
MUDH……Ministry of Urban Development and Housing
JICA……Japan International Corporation Agency
NUPI……..National Urban Planning Institute
NGO……Non Governmental Organization
ORAAMP……..Office for Revision of Addis Ababa Master Plan Project
PADCO……..Planning and Development Collaborative International
WUDP……Works and Urban Development

CHAPTER- I: INTRODUCTION

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1.1 GENERAL

Cities may grow in different geographical localities within an unprecedented scale based on their peculiar functions. Some cities developed along river valleys, water shades, and hilly terrains while others developed along costal lines and plains.

The development of Informal settlement in the City of Addis Ababa has predominantly been aggravated by not only the rural-urban migration but it is largely due to the new economic policy of the present government where an enormous number of ex-civil servants and former government soldiers had been displaced from their regular working and living places. Moreover, the formation of Eritrea as a new independent state had also escalated the range of displacement to a larger extent (Getachew, 1996).

The upsurge of informal settlements exists in different parts of the city among which a large number of people reside and undertake different activities along the riverbank of Great Akaki on sloppy terrains and marshy lands. Great Akaki River is the biggest river in the city that crosses from north to south axis accommodates large number of people in various sectors of economic activities such as urban agriculture, park, quarry, animal husbandry, etc. The area was occupied by informal settlers and also serves as a hiding place for illegal persons. They considered the government could not intervene in such particular areas within a short period of time. Nevertheless, settlers are frequently displaced from their areas, especially during rainy seasons, and are always challenged by government authorities and hence they always live insecure and frustrated life.

Alleviating the current physical and environmental problems of informal settlers is a crucial issue for the City development and the concerned authority should address this issue. However, the city administration regarded this part and parcel of the society as a social malady and environmental pollutants. This negative attitude leads the governmental, non-governmental institutions and even city dwellers to pay no significant attention towards rehabilitating and developing physical and environmental conditions of the settled areas.

This study is intended to find out the reasons for the informal occupation of the land around the riverbanks and to explore the characteristics of informal settlers and assess physical, socio-economic, and environmental consequences. It is imperative to make a thorough survey and proper analysis on case study areas, so that, it enable us to know the level of the problem and its consequences that would help for managing and controlling the degree of physical and environmental hazards and beyond that the government will get good lesson and draw up some policy measure in such particular areas.

The proposed case study required large number of data set, which in turn necessitated the use of multiple methods of data collection and related analysis. Therefore both secondary and primary data in qualitative and quantitative terms were collected and analyzed.

1.2 PROBLEM STATEMENT

At the turn of the 19th century, in most developing nations urbanization started after the arrival of the colonial powers but in Ethiopia initially Emperor Menelik founded Addis Ababa at the hot spring site called filwoha. Later when the Italian invading force occupied the country they established their own garrison around the former feudal lords' settlement on strategic areas, which enabled them to control the whole territory. Parallel to these, the segregation of indigenous people from the invading force put a new planning dimension where administration, commercial, residential, industrial, etc., activities were identified with an established rules and regulations to define and control the overall city development.

The rapid process of urbanization had attracted large number of people towards urban centers in search of job opportunities and better livelihoods. However, the new comers (rural migrants and some urban inhabitants) faced big challenge immediately at the front door of their newly commencing life. One of the first challenges that they faced and which persisted for a long period is the question of an adequate habitable space. In search of private shelters and ample space for different activities the new comers were forced to live in places where the government did not pay adequate attention in such areas like sloppy terrains, and marshy lands.

Informal settlements have come into existence mainly due to the in-affordability and inefficiency of the process of formal provision of land. This phenomenon on the one hand seems a solution to the problem, and on the other hand it becomes a problem for the planned development of the city (ORAAMP, 2002).

Most river bank areas like Great Akaki in the Capital City have been occupied by large number of informal settlers without the legal claim to the land or obtaining permission from the concerned authority and developed as living and working place for low-income residents and middle income group land speculators. As a result of their illegality no governmental or non-governmental organizations pay attention to intervene and rehabilitate the existing physical features, social life and legal status of the neighborhoods, which are described as follows:

1.2.1 Physical: In terms of physical setup, these areas manifest:

- Organic settlement pattern on marshy and sloppy lands;
- Inaccessibility to different housing units and working place;
- Poor infrastructure network like electricity, water pipe, telephone lines;
- Lack of solid and liquid waste management system;
- Bad housing structure;
- Unhealthy environmental conditions; and
- Areas being prone to floods make the livelihood of the inhabitants always at risk.

In addition to these since informal settlers were composed of illegal land occupants most of the houses were built with temporary building materials on marshy and sloppy terrains. Their living conditions are highly worsened, especially during rainy seasons when soil erosion, land degradation and heavy flood occur people are frequently displaced from their areas at an alarming rate.

1.2.2 Social: Since most of the inhabitants in these informal settled areas are among the lower economic group their contributions towards alleviating social and environmental problems are insignificant. Very often they are regarded as the social malady and environment pollutants both by the government and the other city dwellers. Subsequently, these factors and some other constraints have brought social exclusion to this particular riverbank settlers and these area are left as a bottleneck for city development and hiding place for illegal persons.

1.2.3 Legal: The illegal occupation of land and lack of land tenure for the parcel of land occupied and built environment have produced negative impacts on the overall development of the areas. Beyond that the question of having sustainable life and protecting the nearby environment remain unanswered.

Despite these reasons for occupying open spaces, government authorities often challenge informal settlers and hence they live insecure and frustrated life. Such a lifestyle and its consequences demand a thorough survey and analysis to understand the livelihoods of the settlers and the ways in which they manage the areas they occupied and reduce environmental pollution to the minimum level.

1.3 OBJECTIVE

1.3.1 General objective

The general objective of the case study is to find out the reasons for the informal occupation of the land around the riverbanks, explore the socio-economic condition of the settlers, assess and identify the characteristics and the physical and environmental consequences. This major objective has the following specific objectives.

1.3.2 Specific objectives

- To examine the fundamental factors that forced people to occupy lands without legal bases;
- To explore the characteristics of the riverbank informal settlements;
- To make a detailed assessment of the level of informal settlers' impact on the physical and environmental situations of settled areas; and
- To propose some urban design solutions.

1.4 RESEARCH QUESTIONS

- Who are the first settlers that came to the riverbank area?
- What are the main characteristics of riverbank informal settlements?
- Why people are attracted to this area and what type of socio-economic condition do they have?
- What are the impacts of informal settlers on the environment?
- How do public administrators perceive informal settlement development spatially and tenure wise?

1.5 METHODOLOGY

The proposed case study requires large number of data set, which in turn necessitated the use of multiple methods of data collection and related analysis. Therefore, both secondary and primary data in qualitative and quantitative terms were collected and analyzed.

- Secondary data was collected from various literature including previous studies, reports, surveys and governmental policy documents. Further scientific articles and books were referred to obtain relevant theoretical concepts.
- Primary data was generated through field observations, discussions with concerned authorities, informal settlers, kebele and co-operative leaders. However, the major source of primary data was a survey questionnaire developed for this purpose.
- Interview with randomly selected informal settlers.
- Three enumerators were recruited and trained to administer interview on the bases of survey questioners.

1.6 SIGNIFICANCE OF THE PROPOSED STUDY

Currently the inner part of Addis Ababa is in the process of transformation where old neighborhood units are being completely demolished and replaced by new blocks arrangement. Even though, this randomly thought of city development displaced massive number of inhabitants from their old living and working place the intention towards urban renewal seems very promising.

However, parallel to this scenario the rapid growth of informal settlements especially along the riverbank of Great Akaki become a serious issue that needs an immediate intervention from the government side to understand the extent of the existing problems and to show some positive directions, it is obvious that scientific study is necessary.

The importance of making research in this particular area is not to detach from the core area of the city but it is to ameliorate and follow up the present city structure plan. For the moment some corrective measures may require big sum of money even to resolve the short term problem by facilitating some service in the social, economical, physical and environmental sectors. However, In the long run stepping down the level of informality and to providing appropriate measures for such secluded society will yield enormous benefits.

In this study different significant issues were raised but the focus is on physical and environmental characteristics, the aim being to have a clean and beautiful habitable and working city environment.

To acquire a better tomorrow and sustainable environment, soil and water should go in harmony this means that people should not tarnish the beauty of nature by polluting the river with solid and liquid waste that come out from the neighborhood and their environ. Therefore, in order to have systematic city development this sensitive part shall be studied and in turn this will play great role particularly in protecting the natural environment from man made calamity.

1.7 SCOPE OF THE STUDY

The scope of the study is limited to the banks of Great Akaki river settlements focusing on the upper, middle and lower basin. Special attention was given only to the following points:

- Reviewing the existing patterns of informal settlements along the bank of Great Akaki river;

- Identifying the socio-economic situation of the settled area;
- Explore the physical characteristics of riverbank informal settlements;
- Examining the overall impact of settlers on the physical, and environmental situation of the area where they settled;
- Finding out the reasons for the informal occupation of the land around the riverbank;
- Assessing government policies towards informal settlements.

1.8 ORGANIZATION OF THE THESIS

The thesis is organized into six chapters; the first chapter Introduction part dealt with the general background of the study, problem statement of riverbank settlements, objective, research questions, methodology, significance, and scope of the study. The second chapter comprised the research methods which also illustrated the way as to how to conduct this research. Different research methods have been considered among which case study method was selected to assess, examine, and find out the concrete facts and figures of Great Akaki riverbank informal settlements. Three case study areas were chosen; the upper Akaki river (Sore Amba riverbank informal settlement), second middle Akaki river (Amrachoch and Gurage sefer riverbank informal settlement), and third lower Akaki river (Cheri riverbank informal settlement). In addition to this, the secondary data and literature sources served as a background for an in-depth analysis of current practices both at local and international levels.

Likewise the third chapter 'review of related literatures' presented the historical development of informal settlements in developing countries, and three international riverbank informal settlement examples giving clues and a brief description of how riverbank informal settlers attempt to surviving against all circumstances. Chapter fourth as a continuity of chapter three dealt with contextual issues in particular focusing on urban growth and informal developments in Addis Ababa. Inhere the general description of the city, growth trends, and scope of informal settlement was broadly elaborated.

Subsequently, chapter five addressed the case study of Great Akaki riverbank informal settlements depicting the general characteristics of the riverbank area, activities and the detailed features of three selected case study areas. In each case study area the physical characteristics of the site, socio-economic conditions, environmental characteristics and political and legal aspects were comprehensively studied. Eventually, the sixth chapter dealt with the main findings, discussions, conclusion and recommendations.

CHAPTER- II: RESEARCH METHOD

CHAPTER-II: RESEARCH METHOD

2.1 CHOICE OF METHOD

Research methods have been defined as tools to be used for answering specific questions and solving different scientific or practical problems. It is the substance of the matter the questions to be answered-that must guide the selection methods (Mikkelsen, 2000).

Since the nature of the research is examining the characteristics of riverbank settlements, deciding on which method to use as early as possible would enable to design ones research, as each strategy would have its own way of going about the research. In case study method, there is a research design that would help to organize ones research before field work (preparation for field work), in the field work (in conducting case study) and after field work (analysis and presentation of field work).

2.2 PREPARATION FOR CASE STUDY- BEFORE FIELD WORK

Some of the basic elements for case study research design before commencing fieldwork or for the preparation of conducting case study are:

The first one was state propositions if there were any as the preposition that might not lead to 'what you should study' and helps to 'tell you where to look for relevant evidence'. One of the prepositions I have stated or contemplated while setting the preposition were people settled in riverbanks because they are likely not to be expelled by activities, and/or in search of jobs, etc.

Next setting the questions and clarifying precisely the nature of your study question (Yin, 1994:20). For this I have tried to set and study the nature of research questions with the objective. The actor-oriented approach also gives direction to what type of questions should be set (Appendix 1). Some of the questions were why were people forced to live informally along the river bank, and what are the impacts of informal settlers on the environment?

It is in search of irrigation land and habitable space. This led me to look for evidence from the settlers, irrigation associations committee and Addis Ababa Agriculture office.

Industrial waste directed to the rivers and deforestation bears environmental degradation. This also pushed me to examine and understand the role and prospect of Addis Ababa Environmental Protection Office.

First, these kinds of propositions which I have designed enable me to explore the extent of informality as well as environmental damage and also provide a clear picture about the socio-economic background of the settlers.

Second, which parts of the river side settlements should be studied was also indicated in the preposition, so I have sub-divided the study area in to three parts i.e. upper, middle and lower part of Great Great Akaki Riverbank settlements.

Third, determining single unit of analysis, so that, one would know the specific case or groups selected for the purpose of getting the required information and hence design of strategy for data collection and analysis.

To obtain an appropriate response for my questioners, I have randomly selected settlers those who are engaged in agricultural activities and those who sustain their life in some other sectors. This type of case study is not taken as sample but serves as a corridor for acquiring better understanding and getting good information.

2.2.1 Conducting case study- at the field work

Conducting the case study in the field is not just going out to the field and conducts an interview or collect other information from documentation and archive, it needs preparation and skill which might not be easy to acquire immediately. Some of these are: be able to ask good questions, be a good listener, be adaptive and flexible, have a firm grasp of the issues being studied, be unbiased by preconceived notions- be sensitive and responsive to contradictory evidence (Yin, 1994:56). These qualities might come along as we go on the field work and get experience, when I started discussion and interview with the concerned bodies I have faced so many problems, but the main thing to bring them to my track and get proper answer according to my objective needed quite long hours. This task has indicated me what type of questions I should ask- the questions became articulated with the real situation according to the condition of each person or group.

There are various sources of information while conducting case study. Robert K. Yin describes six important sources: documentation, archival records, interviews, direct observation, participation observation and physical artifact. I have employed five of these sources except the participation observation, which was not possible for me to conduct. I have used survey as a sixth source of information. These various sources would help more than getting information to build validity and reliability of the case study. The procedure of the field work by employing these sources is discussed below.

2.2.2 Warm-up formal and informal discussion

I started my field work both formally and informally by discussing my research aim with my academic supervisor and professional/practitioner friends who discussed with me which points from my research issues are relevant and hot issues in the city and helped me in directing me where to look for information.

2.2.3 General observation- visit to the river bank of Addis Ababa

Having this general information in my mind I went out to see for my self the existing situation of river bank settlements in Addis Ababa. On my first glance I looked at Mekanissa area where urban agriculture and residential areas are adjacently located, at the same time the Mekanissa liquor factory is found at the edge of Great Akaki River which has been discharging all liquid waste to the river. The irrigation along the river line, organic settlement pattern and polluted river water strike me to study the unique characteristics of river bank settlements and the impact of settlers, factories, etc… on the general environment.

The reason to do research work on this particular river is, it is the biggest of all rivers, and different activities are performed from the upper part up to the extreme end of Addis Ababa city boundary.

2.3 SELECTION OF CASE STUDY AND SPECIFIC CASE STUDY AREA

With the general information I got through the above two processes (with the aid of secondary information/literature) I tried to look for a case study area for my research. First I went to Addis Ababa Agricultural office to know how many irrigation associations are working on the river banks and where they are located and which of them are along the Great Akaki river bank. After I gathered some information directly I traveled to Nefas-Silk Lafto Agricultural team office. Unfortunately they told me to stop my study because I was to face too many problems while conducting field work on irrigation areas. They reasoned out that farmers are not willing to respond to the questions, the main reason they raised is that when local and foreign researchers tried to assess the general situations of the river/riverbank settlements settlers were not respondent. Later on I neglected what they said and began to approach Mekanissa-Furi and Sarris vegetable grower associations after so many appointments they became positive to respond to my questions.

Moreover, I have discussed with my supervisor on which area I should focus, and he directed me to take three case studies i.e. the upper, middle and lower Great Akaki Riverbank to understand the magnitude of informal settlements and the level of environmental degradation at every locality. This formal and informal discussion helped me which area of the vegetables grower settlements shall be studied. Accordingly, part and parcel of different irrigation associations members residential and working place such as for Kolfe (Kolfe-Keranyo sub-city, kebele[1] 08/09), Mekanissa (Nefas-Silk Lafto sub-city, kebele 06/07/08 and 09/14) and Kality behind the treatment plant (Akaki-Kality sub-city, kebele 10/11/seriti) were determined to be my specific study areas.

Some of the considerations for the selection are the following:

- Kolfe settlement is located near by densely populated and the active commercial core area Merkato, this shows how river side inhabitants integrate their livelihood with market place and it gives a clue why they prefer to live in such environment.
- Mekanissa settlement is found on the expansion area where urban agriculture such as irrigation and animal husbandry are equally carried out. Besides industries, private firms and neighboring residents direct all their liquid and sometimes their solid waste direct and damp to the river. These factors supposed to be a good research area and will give a clear picture about the settlement patter and the level of environmental degradation.
- Kality settlement behind the treatment plant is on the outskirt of the city where low population density, residential building are dispersed and irrigation field is very wide and cultivated adjacent to the river following the embankment of the treatment plant.

[1] Kebele literally mean neighborhood unit consisting more than 5,000 inhabitants

2.3.1 Selecting the specific case study area

Due to wide coverage of each settlement, it is very difficult to cover the whole area. Therefore to collect detailed information about each case study area I limited the number of interviewed people and their settlement boundary. The specific persons for interviews were selected randomly.

2.3.2 Expected future change

According to the new structural plan all riverbanks from the mouth of the river on both sides at a distance of 15m in built up areas and 50m in renewal areas are given to the responsible governmental body the Addis Ababa Environmental Protection Office.

2.3.3 Getting to the community

After I decided the case study areas the first challenge which I have faced is to get an appropriate person that could enable me to guide and provide sufficient information about the community. For every case study area I used different technique to meet the key persons. In Kolfe and Mekanissa site since the vegetable grower associations are well organized they do have their own office so I could easily get the chair persons, while in Kality area behind the treatment plant since the farmers do not have office I directly went to the Akaki-Kality Agricultural office and I found the team leader who helped me by introducing me to professionals working with irrigation workers.

The first step I took was to select which case study area has to be my starting point for shaping the overall studies. Therefore, I selected Mekanissa site (Mekanissa, Furi and Sarris vegetable grower association) as the best place where I could see the general structure of river bank informal settlement, irrigation, industrial buildings and other activities how they are integrated and mutually exist. Before I met the chair person I contacted the secretary and she gave me an appointment to come on their weekly meeting date. Accordingly, I went on time to their office and got the appropriate person, initially he was not willing to mention about his association's background. The reason was that very often people come to their office and tell them they were researchers and get all facts and figures but after a while the information was negatively announced through radio and television that residents of Addis Ababa should not eat vegetable products produced by the river water. The reason being the river is polluted by so many toxic industrial sewage and it become garbage disposal site. However, when I introduce the objective of my study, they were happy to give full information how they are involved in such type of livelihood and began informal settlement along the riverbank.

Second, following the first systematic approach I also went to the Kolfe site (Kolfe and Lideta vegetable grower association) and met the key person who gave me valuable information about the past, present and indicated the future trend of the society how they are struggling to survive and combat their day to day life. Since the area is near by the market place Merkato people are not only dependants on vegetables but also working in some other informal trade.

Third, unlike the two case study areas behind Kality treatment plant irrigation activities are performed mostly by urban dwellers with out any organized association. However, quite very few settlers are living and working along the river side, but they received technical aid from the Akaki-Kality Agricultural Office. Hence, through the technician I could get access to interview the whole community.

2.4 INTERVIEWS

After I passed through the proper channel of the community it became very smooth to discuss and ask questions which I thought are relevant and positive to every individual with in the community in order to get response.

2.4.1 Community leaders

The first discussion which I have held before I started an in depth study about my research was with community leaders; on my initial tripe to Mekanissa since they are extremely suspicious for their daily life for a while they were not willing to lesson my research objective. Nevertheless, after a thorough discussion and argument why I am going to study this particular area they were attracted to the subject matter and tend to narrate what they know starting from the past historical background till the present status of highly informal type of settlement pattern. This mode of action with the community has helped me to assess and understand the real problems of the society. Following this trend I went out also to the other two case study areas where I have used the same technique to reach the whole community.

2.4.2 Household interview

The most effective and dominantly used form of interview I employed was individual household interview more than group interview and community meeting as they tend to be open and give undistorted information without bias from others while discussing individually than in group. I learnt this during the first acquaintance with the community at the community meeting and in other informal discussion where some people either prefer to keep quit or agree with the idea of others. Moreover, this mode helps to know each person individually and discuss in detail till most of the question/ideas are ‘exhausted’. This has helped me to get information, which I might not find in group discussion that is why I opted for individual household discussion rather than group or community meetings. Group discussions have their place and have been employed to get collective information. It is also undeniable that group or community meeting can be also very useful as the individuals in the group meeting might support and contradict each other giving the observer a fairly good idea of the situation.

Interview with household heads

After determining the specific case study area I have conducted a detailed interview/discussion with either head of the family or elder person among the family member. Some time during the interview since group discussion is very important the immediate neighbors would also participate to acquire a better understanding of the socio-economic status of the neighborhood. The maximum number that I took to interview with in one case study area was 10 households; this figure could enable me to show the general background of the informal settlers and the level of environmental damaged caused by so many factors.

Interview with individuals

Among the residents prominent person of the society like elders and respected personnel who know about their community have really provided me valuable information especially during our long discussion by showing the growth trend of informal settlement how the development reached to the present status. These people are a good indicator why people are forced to come and live in such type of

settlement, whether it is due to housing shortage, finding cheap house rent or looking for more benefit by expecting huge profit from illegal form of land transaction.

2.4.3 Government officials

To know the attitude and role of the government towards such type of settlement it is very essential to discuss with various concerned authorities in order to get an appropriate response about the general situation of informal settlement and in particular river bank settlements. Accordingly, I made a thorough discussion with head of Land Administration Department, Sub-city manager, Regulation enforcement team leader, Police office chiefs, Health officers, Kebele Administration heads, Housing agency, Environmental protection representative, and some other relevant heads of organizations. This discussion was helpful to get proper information about how the government looks on such type of settlement especially in the up-grading area like those which I have chosen as case study areas.

The process of formalization of the informal settlements is also one part of the government agenda to those informal settlers who built their shelter before the pronouncement of regulation No.1 and No.2. Settlements that are not violating the revised master plan have a possibility of getting title deed. Those houses which were built in mass particularly after regulation No.2 become the chronic problem for city development. Eviction of houses as a solution by the city administration is also a big issue. Therefore, gathering all information from the government side as well as from the end users is very important for my analysis how things are going on in the near future.

2.5 MAPPING OF SPECIFIC CASE STUDY AREAS

The map which is currently available is very old; it was taken10 year's back. Most houses and some other activities which exist on the ground are not seen on the map. Therefore, to continue my research since I do not get any option first I tried to observe the growth trend maps of Addis Ababa, later I looked the riverbank settlements both in the inner part of the city and on the periphery, finally I focused on my case study areas along the Great Akaki riverbank.

This method of study would give me an opportunity for mapping the socio-economic status of the community, the physical features of each household, the pattern of every plot division and the physical transformation of the neighborhood.

The following maps were used in the study

- General Nor-Tec. map of Addis Ababa was very important to start my fieldwork and identifying the specific case study areas. .
- Map of riverbank informal settlements to see where the riverbank settlers are located.
- Map of my case study areas –to start my case study.
- Historical growth trend, land use, road net-work maps of Addis Ababa.
- Recently made structural and environmental maps of Addis Ababa.

2.6 LITERATURE REVIEW

The literature part is the major part which gives a clue to understand the current practice of riverbank informal settlements at the international and local level. This part comprises theoretical and contextual backgrounds locally and at global level.

CHAPTER- III

REVIEW OF RELATED LITERATURES

CHAPTER- III: REVIEW OF RELATED LITERATURES

In this chapter the issues of informal settlements is assessed in three sections, first the literature review which is more general is discussed and followed by the more specific theoretical and contextual background. The theoretical part reveals some countries' riverbank informal settlements physical, social, economic, and sanitation features, and why people settled in such areas. The third part, the contextual background deals with general description of Addis Ababa, the extent of informal settlements' in the urban context particularly focused on informal settlements physical setting, socio-economic status, environmental impact assessment and the ratified rules and regulations regarding informal settlements.

3.1 HISTORICAL DEVELOPMENT OF INFORMAL SETTLEMENTS IN DEVELOPING COUNTRIES

3.1.1 Review of global condition

Informal settlements have been in existence for a long time. It started as far back in history; chronologies have left evidences in graphic description of such areas as in ancient Roma, medieval Cairo and Ottoman Istanbul. In most developing countries, one-tenth houses in urban areas are informal settlement. Almost all major cities in Asia, Africa and South America have vast informal settlements on the outskirts (UNCHS, 1987). Different countries have different historical development of informal settlements; various studies indicate that the proportion of informal settlement varies from country to country. Each nation has its own characteristics, complex mix of economy, social, political, ecological and demographical characteristically complex, which influence the type of settlement (WHO, 1998).

As stated by Cho and Park (1995), in Seoul, Capital of South Korea, informal settlements began to be formed in the national domain along riverside and mountainous areas. Since the late 1930s unexpected large group of returnees from neighboring countries settled in their own house without the consent of the city government. The rapid economic development in urban area of Seoul pulled enormous number of people from the rural areas to the city and most of them were settled in the outskirt, which had existed or were newly created.

In Rio de Janeiro and Sao Paulo the two largest cities of Brazil, the first manifestation of the largest lack of housing and the beginning of the informal settlement could be found in 1904-1906s. They correspond to the beginning of urbanization and industrialization in the great transformation of economy, politics, and culture as well as of the spatial structure. During this period 20 to 25 percent of the population lived in these informal settlements with reduced spaces, poor infrastructure and sanitary service (Vaz, 1985).

Similarly Tanzania, since independence in 1961 has experienced a higher rate of urbanization due to rapid growth, and massive rural-urban migration; which brought big demand for shelter. From 1964-69 the cumulative short falls for new urban conventional housing were 37,000 and later during 1969-81 it was found to be 250,000 units. In 1990, the figure had risen to 450,000 units. In the mean time from 1964-1970, in Tanzania 40-70 present of urban population lived in unplanned settlement (Mosha, 1995). The present annual growth rate of informal settlement in the major urban centers of Tanzania is estimated at 22-25 percent per year (Kulaba, 1989).

Nevertheless, governments' policies towards dwellings in the informal settlements underwent a major transformation from outright prohibition to legalization. In the earlier periods of their development government did not tolerate informal settlements. The settlements were considered as illegal and the settlers were seen as violators of private or public property rights. But through time owing to various factors governments adopted a more conciliatory and accommodating attitudes that have brought about remarkable creativity in official efforts to provide housing and basic urban services to the urban poor. (Shidlo 1990, 163, Laquian, 1983:7)

Prior to the emergence of such positive attitudes towards informal settlements, harsh measures were undertaken against such settlements by the governments. As a result many settlements were subject to eviction and entire eradication and elimination of their dwellings, which has often led to human suffering and trauma and lose of assets and money invested on the houses by the settlers. The victimized informal settlers also lose their friends, neighbors, and their reciprocal relationships (UNCHS, 1996:247; Laquian, 1983:14, Berner, 2001:295). For instance there were massive evictions programs in many countries during the 1950s, 1960s, 1970s and 1980s; in most developing countries probably the largest was in Seoul in South Korea where millions were evicted from their homes between 1966 and 1990. Between 1983 and 1988, 720,000 people lost their home to demolishing. There were also evictions of informal settlements in some Africa cities like Dakar (Senegal), Khartoum (the Sudan) and Zimbabwe recently (UNCHS, 1996:245; Rakodi, 1997:481).

The more recent western initiated development, which came up with change in attitude from avoiding and elimination to that of support and protection. This initiative was spear headed by the writings of Charles Abram and John Turner immediately followed by the Habitat Conference of 1976 in Vancouver Canada. Charles Abrams in 1964 illustrates the process of informality as a conquest of cities area for the purpose of shelter, defined both by legally or illegally. John Turner absorbed in Peru the lessons offered by illegal informal settlements: that far from being the threatening symptoms of social malaise, they were a triumph of self-help which, overcoming the culture of poverty, evolved over time into fully serviced suburbs, giving the occupants a foothold in the urban economy. More perhaps than any one else, he has changed the way we perceived such settlements. It was his paper at the 1966 United Nations seminar on uncontrolled Urban Settlements that was most influential in setting in motion governmental "site-and-services" housing programs. John Turner in 1969 takes a positive outlook and portrays informal settlement as highly successful solutions to housing problems in urban areas of developing countries.

In 1980s new attitude emerged towards such type of settlement, limitations of upgrading and sites and service, inappropriate government controls and regulations discourage and distort the scale and vitality of individual, family and community investments and activities, the need for something more than informal settlement had been realized and adopt the global strategy for shelter (GSS) to the year 2000 in 1987, so that GSS promoted a latest shift in policy focus and forwarded the related idea of partnership.

Moreover, the concept and principles of enabling have been initiated and started to be practiced by full mobilization of potential and resources of all actors such as formal and informal business sectors, non-governmental organizations (NGOs), community groups and household to make optimum contribution to national shelter delivery systems, and the people concerned will be given the opportunity to improve their housing conditions according to the needs and priorities that they themselves define. However, the sole role of the government will be to establish legislative, institutional and financial frameworks.

The main objective of "enabling approach" and the related idea of "partnership" have to make conditions favorable, through sets of enabling action in support of locally determined self-organized and self managed settlement programs. Nabeel Hamdi (1995) called this approach a support paradigm and considered it as a shift away from the provider paradigm. "In as much as participation in housing is about shifting patterns of control-about community and local organizations' getting more of it-so enablement is the process by which people are empowered to exercise that control." According to the critical analyses made by Burgess, et al (1977) enablement is the social, political and administrative aspect of the neo-liberal theory of development

3.1.2 Informal Settlements in the Sub-Sahara region

A. Socio- economic condition

The underlying causal mechanisms of unequal urban patterns are rooted in the historical growth of urban areas but they find their clearest expressions in the nature of poverty in African cities. However poverty is defined, urban poverty is growing: "Sub-Saharan Africa has the highest proportion of – and the fastest growth in human poverty" (UNDP, 1997:3). More recent observations by the UNCHS are that in Africa, the percentage of people living in poverty declined but the actual number increased. The new estimates indicate that Africa is now the region with the largest share of people living below US$1 a day in 1988. The following table (Table 3.1) shows the percentages of poor for various regions, again demonstrating that Sub-Saharan Africa has the highest proportion of people living in poverty.

Table 3.1 percentages of poor in the developing world

Region	Estimated Percentage of poor for 1998
East Asia and the Pacific	15.3%
Eastern Europe/Central Asia	5.1%
Latin America/Caribbean	15.6%
Middle East/Northern Africa	1.9%
South Asia	40%
Sub-Saharan Africa	46.3%
Total Average	24%

Source: UNCHS, 2001; 15 citing world poverty sheets, 2001

Whilst not by any means the most urbanized continent in the developing world, and despite large gaps in recent demographic information, it is still asserted "Africa has certainly had among the most rapid population growth and urban change of any of the world's region in recent decades (UNCHS, 1996:84). The same report points out that during the first half of the 1970s Africa population growth exceeded Latin America and

Caribbean for the first time. Other, broader measures of human development, such as the human development Index by the UNDP, show that Sub-Saharan Africa also fares the worst, having an index of 0.464, the lowest of all global regions. Some countries being located in the medium category, however, as a region, poverty and inequality are wide spread and extreme.

B. Settlement formation

Many cities grew spectacularly during the 1960s and 1970s (or immediately following the ending of colonial rule in many countries) through rural-urban migration. Annual growth rates of some African cities were as high as five to seven percent, implying a doubling of population every ten to fifteen years (UNCHS, 1996; 87: Mabogunje, 1999).

By the 1980s and 1990s cities were continuing to grow, but natural population increase had become the main contributor. Within countries, large cities tended to slow down in their growth and medium sized cities to take over as the main loci for rapid expansion. This was accompanied by deterioration in physical infrastructure and services as the extension of urban services failed to keep pace with growth in demand (UNCHS, 1996:86). The formal job market shrunk as large civil services were scaled down and many utilities were privatized. The UNCHS describes the impact on activities within the city:

These developments are reflected in the continuous growth of spontaneous, popular housing areas; in the ever-increasing numbers of ambulant hawkers and food sellers on every corner of many down town of African cities; in the increase in size and number of open-air markets; in the pervasiveness of small-scale privately owned public transport vehicles that have taken over the market from the monopoly state regulated bus companies; and in a virtual explosion of small trades and service dealing with almost every facet of life in the city. (UNCHS,1996:86). Not only did informal activities increase the gap between the old, colonial city and the new, often informal areas grew, as did the gap between rich and poor. Mabogunje describes the situation as follows.

Such rapid agglomeration, coming at a point in history of these countries when their economies remain largely fragile and not much transformed from what they were under colonial rule, could only mean that whilst a small minority might be easily accommodated both residentially and in terms of employment opportunities, the majority have to fend for themselves as best as they can. Against the background of the colonial urban planning, African cities became segregated into “European” and “Africa” areas. The former were fairly protected because of its layout and substantial building but it came to be surrounded by a sprawling and exploding tract of poorly built and inadequately serviced residential quarters which in turn extended into expansive shanty towns providing rudimentary shelter and employment opportunities for the new urbanities and those fortunes still keep (them) at the lower end of economic ladder. (Mabogunje,1999:2). Certainly in countries such as South Africa, these inequalities were particularly marked, and continue to characterize post-independence cityscapes despite policies designed to reverse such characteristics.

The main drivers of the future formation and ongoing formation and on going consolidation of informal settlements are likely to be the pressure to find a place (even if marginal) in the urban economy, and then to consolidate one's position in that spatial economy over time, arranging one assets in ways which minimize the impacts of internal and external shocks (Moser, 1998) which might reverse the gain secured.

The above facts about settlement formation hold true for Addis Ababa too. Although, Ethiopia was not colonized the pressure to modernize without adequate provision for the development of infrastructure in urban areas resulted in similar situations.

C. Location and condition of informal settlements

These settlements are created through a process of unassisted self-help and to have two or more of the following characteristics when they are initially created: 1) most houses are built by the family occupying them using initially temporary building materials, 2) the settlements are illegal in some way (whether that is the land tenure, the house construction or both), 3) the settlements are un-serviced, and 4) are mostly occupied by people living in situations of poverty (based on Gilbert and Gugler, 1992).

These key descriptors of settlements are not exhaustive and there would be many more questions about the context of settlements such as physical location and conditions, institutional context (government and non-government supporters or opposes of informal settlement), legislative and regulatory conditions, and the like. Process of regularization or upgrading of settlement (i.e. formal recognition and interventions) also needs to be described in each case.

Information about the current state of informal settlements, informal housing in Sub-Saharan African is fairly patchy, at least at a statistical level. Only some countries report to organization such as United Nations, and some that do report probably underestimate the numbers of houses in informal settlements. There are at least three recognized measures of informal housing that can be applied as measures indicative of the prevalence of informal settlement: tenure, housing construction and access to services.

D. Tenure

Firstly there is home ownership or land tenure. Non-legal occupation of buildings or land is termed 'informal'. The UNCHS defines this indicator as follows: "Housing tenures refers to the rights of households over the housing and the land they occupy, particularly right over land". This includes "Households in informal housing, or housing which has no title to the land on which it stands, and who pay no rents" as well as "Households in informal housing who pay rent" (UNCHS, 1997).

There is no clear correlation between levels of urbanization and informality. For example, the three countries, which have the same level of informality (11% to 12%), have widely varying level of urbanization (Burkina Faso, 18.5% urban; South Africa, 50.4% urban; and Congo, 62.5% urban). The cause of informality cannot therefore be simplistically linked (at least using this small sample) to movement to urban areas. In general the number of urban households without legal tenure averages almost 8%, which is probably a low estimate.

E. Materials

Secondly the type of materials used to construct housing is indicative at least of the prevalence of shack housing. The UNCHS defines permanence as "… the percentage of dwelling units which are likely to last twenty years or more given normal maintenance and repair, taking into account location and environmental hazards (e.g. floods, typhoons, mudslides, earthquakes). …The indicator generally refers to wall structure rather than roof durability…"(UNCHS, 1997).

In 1997, the UNCHS estimated that about 39% of houses in Sub-Saharan Africa were impermanent and that 51% of housing was not in compliance with local laws or standards (UNCHS, 1997). Later reports have figures for only two sub-Saharan countries, with Niger having less than 2% of its housing built from temporary materials (98% in the 'basic' category), and South Africa having 18% of all housing and 25% of urban housing built of temporary materials.

F. Basic services

Thirdly, lack of access to basic urban services such as water and sanitation can also be taken as an indicator of the prevalence of unserviced settlements. Different study shows that urban households, which have no access to piped water in the house, and those that do not have a flushing toilet with in the house. While these are slightly crude measures, and it is not clearly mentioned how many residents have no access to potable water or adequate sanitation.

It should be noted that this included only urban households, and there tends to be less access to piped water in rural informal settlements. Connection averages for whole countries, rather than only urban areas, therefore tend to be worse than those reported on here.

3.2 INTERNATIONAL EXAMPLES

3.2.1 Kapuk Muara, Indonesia

A. Socio-economic

A socio-economic survey was conducted in 1997-1999 with UNESCO support, by several local partners: the Indonesian Institute of Technology (ITI), the University of Indonesia and other foundations on Jakarta bay. Among which Kapuk Muara is one of the study area. Kapuk Muara is an urban water front community on the Muara Angke river estuary about a kilometre from Jakarta bay. The Angke riverbank has been inhabited for over 50 years. The inhabitants consist of two principal groups: 'indigenous people'. Betawine communities who have lived on the Angke riverbank for more than five decades; and new migrants from other part of Jakarta or from other areas settled on the Angke riverbank in the 1990s.

Many people living along the riverbank scavenge used object and collect garbage from the river by boat, which they then sell to a collector. Usually scavengers work on the river renting boats, fishing or in construction work and scavenge only in their spare time.

B. Housing condition

Fig. 3.1 Housing conditions

On the Angke riverbank almost 80% of the houses are semi-permanent, cement or soil floored, with brick and wood walls (Fig.3.1). The crowded clusters of buildings are separated by narrow streets (0.5-1m wide). Housing can be divided in to two categories: house on the riverbank and houses on the stilts in the river. The tidal swamp which functioned as a storage reservoir or flood plain has been filled in and houses now stand on the reclaimed land. The inhabitants pay regular household tax which normally only applies to permanent construction; and the Angke riverbank settlement is serviced by electricity from the public enterprise.

C. Water supply

Fig. 3.2 Washing with Angeke River water

There is no clean mains water supply in the Angke riverbank residential area: people buy clean water from vendors who deliver it by lorry to their homes. The inhabitants pay 30 rupees per liter for clean water (about 20 times more than people pay in luxury residential areas). Clean purchased water is only used for drinking and cooking, while ground water and Angke river water are used for bathing and washing. Children swim and play in the river (Fig.3.2). The scarcity of clean water is due to the natural conditions of the area and the poverty of its people. At present there are three sources: piped water from hydrants, pumped ground water and water from shallow wells.

D. Drainage system

In Kapuk Muara the drainage system is in a very bad condition. The river water is black and has unpleasant odor because of the tidal flow and the use of the river as a garbage disposal system for local household waste.

E. Sanitation

On the Angke riverbank, people have a habit of defecating and urinating in the river; public toilets (hanging toilets) along the river are common. An interesting dimension of hanging toilets is the social interactions it creates between people in the Area.

F. Public health

The most common infectious diseases affecting children are diarrhea, influenza, coughs, skin disease and cholera. People who habitually use river water for bathing are subject to all kinds of skin diseases. Respiratory tract infections are common among children and old people caused by humid conditions and cramped living quarters with insufficient sun light and ventilation.

3.2.2 ALEXANDRA TOWNSHIP, JOHANNESBURG, SOUTH AFRICA

A. Location

The project spotlight of South Africa, Johannesburg, Alexandra Township on the report of interactive Planning Workshop from September 27-30, 2000 had described the riverside informal settlements problems and recommendations. The township of Alexandra (Alex) was established in 1912 and is close to the centre of Johannesburg (Fig.3.3). It covers an area of over 800ha (including east bank) and its infrastructure was designed for a population of 70,000. Since the overthrow of apartheid massive investment has been undertake to improve the situation of informal settlements in different part of the country major and minor towns. Among which Alexandra was a place where large riverbank informal settlements exist.

Currently population estimates very widely ranging from 180,000 to 750,000 among which 20,000 households are informal settlers living on the Jukskei riverbank and its three tributaries at very high densities with poor services, in very poor environmental conditions and in danger from flooding.

Fig.3.3 Settlement pattern of Alexandria

B. Infrastructure

Over the past nine years thousand of shacks have been built over and adjacent to the Juskei River. This area is extremely dense with only tortuous, narrow access, few communal water points and banks of chemical toilets on the periphery of the settlements. Some have electricity supply which appears to have been connected illegally. Narrow (less than 1meter wide) foot paths that wind haphazardly through the shacks provide the only access and water drain-off. Densities likely exceed 3,000 persons per hectare in this settlement which is not less than 6,000 families constructed along the bank of the Juskei River are in danger in time of flood. Almost 80%of the residents do not have access to electricity even those who have use it only for lighting purpose. Most of them use paraffin for cooking and heating, alternatively a flame stove which is a poor quality version is widely used. There is little to no running water in the settlement, telephones and basic infrastructure are badly lacking.

C. Sewerage

Toilets are placed on the periphery of the informal cluster, due to space constraints within the areas and threats of crime, dwellers do not venture out in the night to use the facilities. Hence overnight containerization of waste water is required which is disposed next day.

D. Housing conditions

Fig. 3.4 Juskei Riverbank

The majority of homes are constructed from temporary material like wood and cardboard, flooring is soil. Between each habitable unit there is a gap of less than one meter space, at the time of rainy season most of the houses have been washed away very frequently, beyond that the danger on human life is very immense (Fig.3.4).

E. Environment

The livelihood of people occupying in such settlement are always in fear of disaster both by the government policies (eviction and relocation), and environmental hazard. Vulnerability to disaster is increased as a result of certain qualities of location, such as settlement with in flood planes, congested settlement pattern, and steep slope bears very frequent flood hazard and spread of epidemic diseases like malaria, cholera, and others illness are widely observed in the settlement.

3.2.3 Nkandabwe informal settlement in Kitwe, Zambia

A. Location

A Case study of Nkanndabwe in Kitwe, Zambia on struggles involved in upgrading informal settlements was carried out on October 2006 by 4thyear Cooper belt University Real Estate student Nsemiwe Nsaama. In her study she elaborated how and where informal settlements generated and indicate the level of social interaction to sustain life in such haphazard environment.

The history of informal settlement in Zambia can be traced from the time when the British South Africa company gained prospecting rights for minerals in the Northern Rhodesia (Now Zambia) in 1891, and discovered workable deposits of Lead and Zinc at broken hill (Now Kabwe). Kitwe was founded as a copper mining centre in 1936 and the town was established as a management board in 1951 and in 1954 was elevated to a municipal council. It achieved city status in May 1967 and is normally refereed to as the hub of the copper mining industry in Zambia.

The City has twenty five informal settlements and there are no new housing stocks being built that will cater for the urban poor. Among those settlers Nkandabwe informal settlement lie just near by the Kitwe River beside very busy road and rail line passing next to it. The population of Nkandabwe has been increasing in 1997 they were 72 housing units and a population of 576 while in 2005 they were 358 housing units and a population of 2005. At present this settlement has 462 housing units and has a population of about 2,800.

B. Infrastructure

The settlement has poor infrastructure and no proper or tarred roads. Sanitation is very poor and the only toilet facilities in the whole settlement are pit latrines. The inhabitants used to get water either from the Kitwe River or some leaking pipes that are near the settlements. There is no electricity for lighting they use candle, and for

cooking the inhabitants use charcoal and fire wood. There is no collection of garbage so open pits or near by bushes are used for refuse disposal. Only one Community School exist in the settlement, where as in terms of health facilities there is no medication; patients are taken to the near by clinic or to the far distance Kitwe central hospital or else attend the traditional healer.

C. Building materials used in construction

Most of the houses are constructed from adobe blocks which are made with out proper materials and skilled workmanship (Fig.3.5). During the time of heavy rainfalls some houses are washed away. The houses vary in size and may range from one room up to about six rooms. A variety of roofing materials are used and these include a polyethylene sheets, sacks, carton boxes (these account three quarters) and the rest one quarter use either iron sheets or asbestos(Fig.3.6).

Fig.3.5 Housing being constructed

Fig.3.6 Roof made of various materials

Fig.3.7 Timber& plastic covered pit latrines

Cooking is mainly done outside the house but some houses have shelters or hut like structures. Toilet and bathing places are in some houses separate or together but are not attached to the main house (Fig.3.7). They are mainly made of an assortment of materials such as sacks, pieces of timber, clothes that mainly cover these facilities.

D. Social amenities and shopping facilities

There is only one bar where people used to spend their spare time. No proper shop exists in the settlement, so people go to St. Anthony market which is about five minutes walk from the settlement or town centre.

E. Economic aspect

Most of the people in this settlement work in the mines, industrial area as casual workers, and the majority of those who have more permanent jobs are guards. Some get their income by selling stones and sand while others are maids or gardeners.

F. Environmental aspect

The mine located a few distance away from the settlement emits Sulphur dioxide which is considered to be the major health hazard and believed to cause respiratory illness. Trees are cut down for producing charcoal or as a source of energy are leading to deforestation therefore increasing soil erosion.

In terms of waste management the use of pit latrines may pose a risk of polluting underground water and in some cases when it rains all wastes from the pit latrines may go in to the stream where people go to bath and wash. Illegal quarrying and sand digging that are practiced in the settlement leave holes in ground which serve as the breeding grounds for mosquitoes, and it was revealed that malaria is the commonest that affects the inhabitants (Fig. 3.8).

Fig.3.8 Pits due to sand digging

G. Political aspect

The settlement is true evidence of the influence of politics in the existence of informal settlements as most political support comes from informal settlements. Any interference or changes with regards to the settlement can mean loss in votes for the political party.

H, Legal aspect

At present Nkandabwe is referred to as undeclared settlement. The tenants of illegal or informal settlements live in constant fear of eviction or reallocation, but these inhabitants are protected by politicians whom they are asked to vote in return. The issue has two contrasting legal situations. Under the housing act the area is not recognized while under the electoral act it is recognized. This has continued to bring about arguments in terms of security of tenure in many settlements as well.

CHAPTER- IV

URBAN GROWTH AND INFORMALITY OF DEVELOPMENTS IN ADDIS ABABA

CHAPTER-IV URBAN GROWTH AND INFORMALITY OF DEVELOPMENTS IN ADDIS ABABA

4.1 INFORMAL SETTLEMENTS IN ADDIS ABABA, ETHIOPIA

4.1.1 General description of Addis Ababa

Addis Ababa is the capital city of Ethiopia; it is one of the largest metropolises in Africa (Fig.4.1). The city is young with regard to the Ethiopia History; it is only just over one hundred years compared to the country's millennia.

Fig.4.1 Location of Ethiopia and Addis Ababa

However, the city served as a metropolitan center where modern ideas, technology and urban way of life developed during these years. The capital has become the nation's center for industries, commerce, education, institutions and governments. It plays a decisive role as an agent of change and transformation. Addis Ababa consists of urban and rural areas, the population density varies between 5 inhabitants/ha in rural areas up to 632 inhabitants/ha in slum areas that dominate the spatial structure, According to the 1995 constitution of the "Federal Democratic Republic of Ethiopia", Ethiopia comprises nine states, and Addis Ababa was given the status of a self-governorate. At present Addis Ababa is under the jurisdiction of the Addis Ababa City Government.

On socio-spatial and administrative aspect the city is structured into three levels, which now consist of 10 sub-cities and 99 Kebeles. Despite the fact that several different master plans for the city were developed during this century, no adequate urban planning has ever been achieved. As a result, Addis Ababa has experienced almost uncontrolled growth from a small city to a metropolis, lacking any sound land

use and infrastructure planning. The total size of Addis Ababa covers 540Km^2 and the built up area where both the formal and informal settlement exist is roughly estimated to be 30,000 hectares. There is no as such reliable data, which depict about the riverbank settlement but there is a general description about informal settlements on the ORRAMP, 2002 study.

4.1.2 Physical features

Addis Ababa is sited at the geographically center of the country between 80 55' and 9' 05' North latitude, and 380 40' and 380 50' East longitude having an area of 540Km^2 of which 18Km^2 are rural. The city is encircled by the Entoto hills to the north; Mountain Menagesha to the west, the volcanic cones of mounts Wecheca, Repi and Furi to the west and southwest. The "corvette" on which the city rises opens to the south towards the great plains of Great Akaki (AAMP final report, 1994). The topography of Addis Ababa is rugged with many typical volcanic features (AAWSA, 1984). The central part of the city is characterized by gentle and rolling topography.

The northern part is characterized with scattered patches of hills here and there, while the southern part is predominantly flat. The Entoto ridge, which prohibits the city's future expansion to the north, forms the divide between the Blue Nile basins and the Awash basin. 7 major; 6 medium rivers which are fed by 75 small tributaries cross the city from north, north south, north west and north east, among which the Great Akaki, and Kebena rivers are the most dominant ones where all these elements have in the past conditioned and guided the growth of the city (AAMP Final report, 1994). The most important streams and rivers that converge towards Great Akaki Rivers also include Little Akaki, Ginfelle, Banyiketu, Buhe, and Kechene streams.

Addis Ababa is a tropical city, with altitude ranging from 2600m (at Mt. Entoto) to 2100m (at Great Akaki plains). Trees, gardens and urban agriculture have made Addis Ababa a "Green City". Vegetation in Addis Ababa is not only an aesthetic element. It is also an important economic asset that must be preserved and improved. Urbanization with out preplanned clear and implemented urban development guide has paved the way to flourish informal settlements at every corner of the city especially on the expansion area, open space, green area and along riverbanks. In addition to this environmental degradation prevails; sever deforestation of the green; flooding of the city center that causes the loss of human and animal lives and the damage of the city's physical infrastructure.

4.1.3 Climatic features

Rainfall in the city is seasonal varying in amount, space and time. There is the long and heavy summer rain (normally called kiremt[2]) and there are short and moderate rains in spring, autumn and winter. These are collectively known as the little rain or belg[3]. Though all the four seasons have their own period and climatic characteristics, the important once, which show remarkable differences in rainfall, are the summer and winter seasons. In contrast to the summer (wet season), the winter is a season of lowest rainfall and hence is referred as dry season.

[2] Kiremet is rain season
[3] Belg is spring season

Despite its proximity to the equator, Addis Ababa enjoys a mild, Afro-Alpine temperate and warm temperate climate. The lowest and highest annual average temperature are about 10^0C and 25^0C. Rains usually come during two periods of the year. Major rains from mid-June to September account for 80% of the annual rainfall. Small rains come from mid-February to April. The rains between these seasons used to be rare but recent statistics show some monthly rainfall from February until September. Average annual rainfall is around 1200mm. About 800-850 mm of this falls within the wet season. Maximum monthly rainfall is 250-300 mm. (Tesfaye Berhe, 2002)

During the dry season the winds are mainly from East (6-12m/s at day time), while in the humid season the winds are generally from South or South-West (4-8m/s). During the wet season the wind direction varies, velocity varies strongly and thunderstorms are common.

4.1.4 Administrative and socio-economic features

The growth of Addis Ababa in the last decades shows a phase of fast and chaotic inflow of population from the whole country (AAMP final report, 1994). The population censuses conducted in 1961, 1967 and 1978 estimated the total population of Addis Ababa at 0.4, 0.7 and 1.1 million. The 1984 census estimated the population to be 1.4 million. According to the 1994 Census, the population of Addis Ababa was found to be 2.3 million. The estimate for the year 2000 is 2.6 million. Modest estimates of the population in the year 2015 vary from 4.1 million to 4.6 million while for example the United Nations Development Program has given an estimation of 6.6 million people in 2015. Much of the population growth is expected to happen due to high fertility rate of the city inhabitants, and in addition to this the continuous influx of rural migrants to the city.

Addis Ababa is one of the two-chartered cities (i.e. Addis Ababa and Dire-Dawa) found in the country and it has its own city government and city council. Administratively the city region is sub-divided in to 10 sub-city and 99 kebeles (including 20 peasant associations). Kebele is the lowest administrative unit, which has between 20,000 and 30,000 dwellers. The vast majority of the population of Addis Ababa is poor, and lacks adequate access to basic needs. The problems of poverty are compounded by homelessness and environmental degradation, the rising cost of living and spread of informal settlements. The pervasive state of poverty in Addis Ababa is manifested in, among other things, poor quality dwellings, informal settlements, insalubrious neighborhoods as well as an increasing number of beggars, street children, and prostitutes.

The 1986 Addis Ababa master plan proposed that new housing in expansion areas; redevelopment, infill or densification in the city core and intermediate zone should be used to solve the then identified housing problems in the city. Accordingly, a total of 6,400 hectares of land at Kotebe, Keranyo, and Mekanissa-Kotari expansion areas were proposed to be developed for residential uses alone within the planning period so as to accommodate the targeted population of 482,000, 292,000, 267,000 respectively. Review of the implementation of the master plan within the past 14 years shows that an estimated 55 percent of the total proposed expansion areas have already been developed. Housing has been one of the critical problems in Addis Ababa. The major reason for this is that the formal land provision had been

discontinued for significant number of years. In addition, it has been highly constrained, inefficient and complicated creating huge backlogs of housing in the city. As a consequence informal/squatter settlements have proliferated. Within the recent past, the informal sector has produced the largest number of residential units in expansion area, open space, green frames, and riverbanks of Addis Ababa.

According to ORAAMP 2001 an estimated 300,000 population lived in these informal settlements. The estimated number of units in these settlements is about 60,000. This figure accounts for about 20 percent of the total housing stock in the city. The housing condition in these informal settlements is generally poor, but there are some exceptions where quality houses can be found. The plot size generally varies from 200-2,000M^2. As compared to settlements built through formal procedures, most informal settlements are less dense because the plot sizes are larger and in most cases also irregular. The proliferation of informal settlements and deterioration of the city core can largely be attributed to the implementation problems of the master plan. A new public agency was to be established for proper implementation of the Master plan. This actually has not been realized.

The City Government had undertaken the required institutional reorganization and creating favorable conditions for housing construction by cooperatives, individuals, and private developers. Moreover to solve the current housing problem and to alleviate informal housing construction at every corner of the City Government of Addis Ababa has designed an integrated housing development program aiming at significantly improving both the quality and quantity of accommodations available to the residents of the city. According to ORAAMP 2001 the backlog of housing is estimated at 300,000 houses. This considers the existing 150,000 Kebele houses that are over 40 years and mostly constructed of chika[4].

The integrated housing development program also considers the very high unemployment problem (42%) and widespread prevalence of the informal sector in the city. In addition, the program recognizes the potential role of the construction industry in creating employment opportunities and inducing the development of micro and small scale enterprises. To materialize cost effectiveness low-cost building technologies have been applied for constructing low-cost multi-story condominium housing block. Apparently as income of the wider public increases, the potential for renting and in the long-term buying the newly constructed houses is also enhanced.

There is no financial subsidy allotted from the federal government to this sector, only the city finance office has yearly allocated nearly half of the capital budget for housing construction. Accordingly, to make it feasible the housing development program has made a study on the type of houses, income of the city residents, renting and transfer of use right of houses, to understand viability of the program and to what extent it would minimize the level of housing shortage.

In 2003 about 450,000 people were registered in different sub-city housing agency offices to acquire various type of housing units but till the mid of 2006 fiscal year as report of the Addis Ababa Housing Development Office summary of number of houses constructed including GTZ shows only 32,403 houses from the total projected 150,000 houses have been finalized in different sub-cities. Besides impending access to adequate housing for the urban poor, prohibitive building codes

[4] Chika is local name of mud

hinder the development of small-scale and semi-formal building sectors, which could play an important role in poverty reduction. Revision of building codes and the establishment of technical norms and standards for local building material would contribute to alleviate shortage of housing and unemployment.

4.2 INFORMAL SETTLEMENT IN ADDIS ABABA

4.2.1 The trend of informal settlement

The reason for the emergence of informal settlements varied in spatial-temporal terms. The causes are different for geographical area and time span. The tradition of the urban society in Ethiopia is dictated by the rural living arrangements, because Ethiopia has not fully been urbanized yet. The culture of expanding legal occupation in order to own bigger plots emanates from the fact that the residents strongly adhere to property ownership in conjunction with bigger spaces for security purposes and as a sign of wealth. This is the characteristic of Ethiopian people until the present time (ORAAMP, 2001).

According to PADCO/NUPI repot of 1991 in Addis Ababa 60-70 percent of urban households were living in informal settlement. After the downfall of the socialist regime in 1991 another favorable condition was brought for the expansion of informal settlement in the city. In less than 10 years this type of development has shown radical growth, which consumed areas reserved for future development and expansion of the city on the urban agricultural land, sloppy terrain and along the Riverbanks. Moreover, the study indicated that out of the total 94,135 housing units built in the city between the years 1984-1994 nearly 15.7 percent of housing stocks i.e. 14,794 housing units were provided by informal means. About 60,000 households exist in different informal settlements of the city that provide shelter for more than 300,000 people (ORAAMP, 2001).

Despite the fact that Addis Ababa Works and Urban Development Bureau has been bulldozing until recently including high standard sometimes two story houses. Informal settlement has been flourishing from time to time at every corner of the city with an alarming rate. Generally speaking due to the inappropriate land delivery system and lack of good city administration, people were forced to look for another alternative such as buying land illegally from the near by peasant associations or else invade vacant land like sloppy terrain and riverbanks which are neither wanted by the government nor by the nearby settlers until recent times.

4.2.2 Definition of informal settlements

The drastic development of illegal occupation of land to build temporary, semi-permanent and permanent houses in the inner most, inner and at the periphery of the city has tremendously escalated as time passed. The manner of land appropriation, settlement pattern vary both in scale and time dimension, beyond that each and every development has its own peculiar terminology such as informal, squatter and slum settlements (Table 4.1). Therefore, it is imperative to define the behavior of each terminology in order to have a clear picture about the subject matter and it is stated in a tabular form as follow.

Table 4.1 Definition of term

No	Terminology	Description	Source
1	Informality/Illegality	It consists of activities that contravene official regulations in one or more ways. It is the failure of the formal system to respond to the needs of households and the inappropriateness of regulations to their capacity to pay.	Wubishet, 2002
2	Squatter	A person who settles on a new especially public land without title. A person who takes unauthorized land possession of unoccupied premises. It refers to the legality of land ownership and other infrastructure provision.	Oxford dictionary
3	Slum	Residential areas that are physically and socially deteriorated and in which satisfactory family life is impossible. Bad housing is the major index. By bad housing is meant dwellings that have inadequate light, air, toilet and bathing facilities It refer to the environmental aspects of the area where a community resides.	Encyclopedia Britannica

4.2.3 Typologies of informal settlements

Various studies have been conducted to identify the type of informality in urban housing at global as well as at local level. Informality may be categorized on the basis of tenure type, the socio-economic status of the occupants, the location of the settlement, and the manner of land acquisition. In the days when land invasion was common, Charles Abram (in Abu-Lughod, 1977) one of the early analysts of the informal settlement categorized informal settlers into the following groups.

- **Tenants**: the poorest class of informal settlers who neither constructs nor owns their dwelling, but pay rent to another informal settler,
- **Owner**: they own their dwelling, but have no legal right to occupy the land they built on or possess building permit for the construction,
- **Holdover**: people who occupy land and construct minimal accommodation to secure the holding. Their main aim is speculation either to get compensation at the time of formal development or to sell the land at higher price.
- **Informal land lords**; these are long established informal settlers who have more rooms than they need and rent out to others at higher rates compared to tenants' income.

Informal settlers in each of these categories have different views about their settlements, but all aspire to be included in the formal system; in absence of benefits, they opt to remain informal as long as the threat of demolition is minimal. The typology of informal settlers on the basis of tenure is basically similar to the list

given above. However, empirical studies suggest that there are slight variations; informal setters in the Ethiopian case could be categorized into the following groups (Table 4.2).

Table 4.2- Typology of informal settlement

1. Based on land acquisition method	2. Based on location	3.Based on socio-economic status	4. Based on age of settlement
Buying from farmers	Extreme periphery	Owner-occupier (poor household with permanent income)	Old established settlements (more than 20 years)
From kebele administration	Environmentally sensitive areas such as river, steep slope, etc.	Tenants (very poor, irregular income)	10-15 years old settlements, established settlements with services
From government institutions not delegated to deliver land	Settlement along major roads not yet developed but with planned development soon	Holdover for own use or for sale (better-off, businesses establishments or individuals)	5-10 years with no service
Illegal squatting (edjemenagna[5])	Land reserved for services	Owner-subleete: established shelter, with permanent income	Less than five years, unsettled settlers,
Buying from informal holders	On squares and public open spaces (normally plastics houses no permanent foundation)		

Source: Analysis by the study team
Urban Development Policy Design Project (NUPI, 2003)

4.3 FACTORS FOR THE FORMATION OF INFORMAL SETTLEMENT

4.3.1 Urban population growth

Increasing of urban population is the main factor for the expansion of informal settlement in urban centers and has increased the demand for housing. Such dramatic increase of urban population in the developing cities creates pressure on the local government to provide fast and accelerated access to land and housing. For instance in 1950 less than 300million people lived in an urban centers in developing countries, where as in 1957 this figure had reached 1.1 billion, which had shown 72.72 percent growth within seven years. It was also estimated that by the year 2000 slightly more than half of the world population would live in cities without adequate urban housing basic infrastructure, social service and security of tenure (Janet, 1993 citied in Haddis, 2001).

[5] Edjemenagna is ownership type which does not have any legal base.

4.3.2 Land tenure system and housing

The land tenure system of Addis Ababa without any doubt has been dictated by the political situation, policies and administrative system of different periods starting from the inception of the city. Based on this condition there have been three main land holding conditions and policies in Ethiopia in general, and in Addis Ababa in particular.

A. The Imperial Period: The large area of the land had remained directly under the crown while The Ethiopia Orthodox Church had also a powerful force in the city's history, had been the second largest landowner in the city and had about one third of the total share. The royal family and the nobility were the third major land owners. This early land holding system in Addis Ababa had influenced highly the settlement patterns and housing conditions in the city (Birke, 1997:6, Eshetu, 1986:80). For instance some of the sub-standard houses and informal settlements of today in the city are the result of the earlier settlement patterns and land holding system (Birke, 1997:8).

Landlords used to legally lease their possession for 5-10 years. This coupled with little planning intervention gave way to irregular plot sub-division, haphazard and sparse settlement, narrow and meandering roads (Degefa quoted in Mathews, 1997:23). This has got its own negative impact on housing conditions on the provision of necessary impact on housing conditions and the provision of necessary facilities and housing amenities in the city (Birke, 1997:9).

The government that existed during the pre 1974 period did not involve in the production of housing as was during the succeeding Derg[6] period. As such, the activities regarding housing industry were predominantly left to the private sector (Shewanesesh, 1994:31). Riverbank development emanated during this period where land lords lease out their land to private land developers for irrigation, industries, and some other activities, so that parallel to this quite a large number of daily laborers settled along the riverbank on the flood prone and steep slope terrain.

B. The Socialist Period: One of the landmark measures in relation to urban land holding system and housing is the nationalization of urban land and extra houses in July 1975 (Proclamation No. 47/1975). As a result land was formally transferred into the hands of the government and started to be public property. The government driven by the ever increasing demand and the unresponsive housing supply was forced to allocate land for residential use and also adopt the housing co-operative system (Solomon, 1985:63).

With regard to housing industry, the co-operative scheme was established as one of the major housing policies, which was indicated in proclamation no. 138/78 of the Derg government (Solomon, 1985:70). The government was also involved in constructing and renting of houses in urban centers of the country in general and in Addis Ababa in particular (Birke, 1997:10).

[6] Derg: socialist government which ruled the country between 1974-1990

During this period since land was transferred from individual ownership to state property almost all industries and agricultural activities along the riverbanks were expropriated and the settlers that were working and residing following the embankment of the river were shifted from private employment to a state-led well organized co-operative farming and factory workers. On the other hand, the question of obtaining land was insignificant; no new development existed and the magnitudes of informality remained stagnant for a longer time till the fall of the socialist regime.

C. Post 1991 period: This period has been characterized by pronounced increase of urban land value. The significant increase of use value already had begun even during the end of the socialist period. The EPRDF government has already made it clear that it will pursue market led economy and issued urban land lease policy by proclamation no. 80/1993.

This proclamation stipulates that, the government will continue to provide land for any person who is capable to finance the initial payment and construct the required project according to the master plan on the basis of the lease agreement that she/he signs with the city administration (Tamirat, 1997:43). There had been a time lag that has led to the aggravation of the housing shortage in the city. This was mainly because while the lease policy and other related legislation were being prepared, land allocation for residential as well as other developments came to a stand still due to the absence of clear housing and land development policies (Eyob, 1993:18).

Moreover, the stringent obligation attached to lease, especially depositing 20 percent of the construction fund in a blocked account is also another hindrance to this land acquiring system. People are also suspicious of the right in the leasehold system and in most cases refrain from using it (Tamirat, 1997:41).

Generally due to the unaffordable land cost and housing construction cost, large numbers of city residents were forced to seek land on expansion areas, quarry sites, hilly lands and along riverbanks, so that they started their informal settlement pattern in mass with unprecedented scale. The growth of informal settlements along riverbanks was high since government intervention was minimal.

4.3.3 Urban management and supply of developed land

Like any developing country Ethiopia has suffered from poor urban land management due to fragmented administrative division and weak control over the urban land. It has created consumption of fertile land for fast horizontal growth of the urban area; people were able to get large plot of land mainly in the outskirt of the urban kebele. Regarding to the supply of developed land it is very limited and exceedingly far behind the demand for urban developed land. The rapid horizontal growth of the urban area and the increase of urban population go beyond the capacity of the government to provide serviced land for the urban population. This includes water supply provision, road accessibility, electricity provision, telecommunication service etc.

4.3.4 Housing deficit and un-affordability

Presently, one of the burning issues in developing urban areas is shortage of housing. The supply of housing does not match the demand of the population in most urban centers. According to Addis Ababa works and urban development bureau (1996), the total housing demand estimated was about 261,295 housing units

from 1996 to 2000, out of this 39% is to reduce overcrowding and replacement of obsolete dwellings. But experience has shown that the actual annually supply doesn't exceed 10% of the required number.

Urban poverty in Ethiopia is significant and growing at an alarming rate. NUPI (2002:69) states that, in 1996 out of the total 8.1 million urban populations in the country about 4.9 million or 60.5 percent lived in absolute poverty. Whereas, in Addis Ababa about 70-80% of households earned income below the poverty line, which indicates formal housing production will be out of question due to affordability issues.

4.3.5 Lack of housing finance

Emperor Haile Selase established the first formal housing finance system, the Imperial Saving and Home Ownership Public Association. The aim was to promote economic use of money by providing a convenient and safe method for people to save and invest their money and to provide individual houses. However, there was no provision for financial subsidy for the low-income.

Later the Derg regime adapted financial subsidy. It gave such subsidy as soft loans and reduced rate of interest to housing co-operatives and low-cost housing program, where as the present government has not provided financial subsidy to the sector. Nevertheless, the government had established Housing and Saving Bank, which provides loan for the construction, repair, modification and acquisition of dwelling houses and buildings without reducing the interest rate.

It should be noted that the highest coverage of housing finance especially to the low-income urban inhabitants was attained by the Derg regime mainly in Addis Ababa, where 20 percent of the households borrowed from the housing and saving Bank. This figure was largely the result of subsidized interest rates at 4.5 percent for cooperative members of low-cost housing. To sum up, the lowest income household were enabled to find affordable and secure land located as much as possible near to the job opportunity. However, at the present time, due to the absence of affordable financing schemes, the situation has affected the development of low-income housing directly and indirectly both in quality and quantity. It also encouraged the low-income people to construct houses illegally.

4.3.6 Attitude of Local Government towards Informal Settlement

Official attitude towards informal settlement throughout the entire world ranges from being neglected to outright hostility. In various governments informal settlements have been the subject of a series of policy measures such as:

1) Removal of informal settlement and the eradication of the residence from their original site.
2) Upgrading of the settlement which involves substantial improvement of physical infrastructure with out displacing the residents from the area.
3) Regularization: Where unplanned areas are re-planned to adhere to minimum standards.

In Ethiopia like any developing country the government attitude towards informal settlements ranges from demolishing to legalizing. The City Government has prepared Regulation No.1 December 1998 to control the problem of proliferation of

informal settlement by improving poor urban land management and red tape of bureaucratic procedures. This regulation consists of two policy measures.

- First, recognizing the settlers who had constructed their house before the enactment of proclamation No. 47/67 and till the 1988E.C data collection of urban development information center.
- Second, eviction to those who construct their house and occupied land after 1988 E.C (WUDB).

By taking in to consideration the policy measures, the Addis Ababa city government has taken significant evictions in different areas of the settlement at different time. For instance, around 400 houses were evicted in 1995, those who construct on open spaces in the central part of the city. Moreover, in 1988EC the bulldozing activities have destroyed 2,500 to 3,000 illegal housing units in Kotebe, Akaki, Nefas-silk Lafto (Haddis, 2001), and then the action was continued till now by destroying around 3,500 informal housing units in 2002.

After assessing these consecutive measures the provisional city administration has formulated some regulatory framework to protect and implement the recently revised structural plan of the city from any illegal occupation of space and informal construction. Thus, with some supportive amendments Regulation No.2, January 2002 was enacted and is being applied. This regulation consist three measures:

- First, demolishing informally built houses on illegally occupied land mainly those constructed after taking the aerial map of 2002.
- Second, recognizing any housing construction that does not violate the structural plan may get title deed.
- Third, protect and control illegal invasion of land through law enforcement body and public participation.

Besides, any land which was given for farming activity may not be used for construction purpose if they do so the built up space would be demolished and farmers will be penalized according to the government law, and eventually farmers do not have any claim over the land.

Nevertheless, those who settled along the riverbanks were neither touched nor faced such kind of problem up to now, this seems the government may not take any action in the near future, as a result, as time passed more people are pulled to live in such areas where they can get ample space on riverbank, quarry site, steep slope terrain and agricultural land.

4.3.7 Access to land

The systems of acquiring land for informal settlements are very promising and they are varied. The known system of acquiring informal housing in Addis Ababa is through gift, inheritance, purchase, and occupation without payment. In such illegal or informal land markets for housing, the individual or household seeking a housing plot has to pay for it. Mostly the person who sells the plot is the landowner or a developer acting on the owner's behalf or a developer, who sub-divides public land, as it is observed in informal settlements. In such localities there are individuals who became rich by selling land without title deeds. In Addis Ababa, the City Government

and the professionals working in the municipality are blamed for not checking the expanding informal settlements, in fact they are considered by many as participants.

4.4 THE EXTENT AND PATTERN OF INFORMAL SETTLEMENTS IN ADDIS ABABA

Major informal settlements are located at the peripheries of the city at Gulelle, Bole, Nefas Silk-Lafto, and Akaki-Kality sub-city (at the south, south-eastern, south-western and north-eastern parts of the city) on a potential development and expansion areas (ORAAMP, 2001). There are no significant informal housing developments in the northern part of the city where there is no expansion possibility and where infrastructure development is limited. In this instance topography plays a role. The terrain, not the laws and regulations have prohibited informal settlements.

Table 4.3: Locations of Riverbank Informal settlement

River	Length of river (Km)	Location		
		Area/district	Sub-city	Kebele
Great Akaki	35.6	Kolfe on both side of the river at Lomme Meda and Sore Amba	Kolfe-Keranyo	10/11
		Mekanissa Amrachoci and Gurage sefer	Nefas silk-lafto	06/07/08 and 09/14
		Lafto costa sefer beyond Bihere Tsige park	Nefas silk-lafto	16/17
		Sarris	Akaki-Kality	12/13
		Kality around the waste water treatment plant, settlement along the river	Akaki-Kality	10/11/ Seriti
Little Akaki	20.5	Mesalemia, locally named Shankila river and Kacha fabrika All along the river line	Addis Ketema	08/09/18
Kebena	23.9	Behind Bole Michael church	Bole and Nefas Silk-Lafto	01 and 11
		Behind St. Joseph church on quarry site	Nefas Silk-Lafto	11
		Worku sefer, Sarris area	Akaki-Kality	12/13
		Ginfele	Arada	13/14
		All along the river line		
Bantyiketu	4.5	Filwoha area	Kirkos	15/16
Kechene	11.2	Piazza, Eri bekentu, and Old Kera	Arada	03/09, 10, 01/02
Kurtume	9.3	Habte Giorgis bridge	Addis Ketema and Arada	01/02/03, 12 and 01/02
Hanku	8.6	Kotebe	Yeka	16/17/18 and 19/luke

Source: by the author

In addition to this along the major and minor rivers and on flood prone areas i.e. on marshy land and steep slope surface quite a large number of people settled in the inner part of the city along the *Little Akaki river* Mesalemia, Tollesa sefer, Kera, *Kurtume and Bantiyeketu rivers* Habtegorgis, Golla sefer, Filwoha, *Kebena river* Ginfele, Bole Michael church, St. Joseph church, Worku sefer, and on peripheral area like Great Akaki river Kolfe, Mekanissa, and around treatment plant (Table 4.3).

An estimated 300,000 population live in about 60,000 units in the informal settlement areas of Addis Ababa (ORAAMP, 2001). This figure as mentioned above, accounts for about 30% of the total housing stock in the city. This doesn't include the informal land occupation and construction for non-residential functions such as churches, mosques and other type of services. It is also to be reminded that there are unregistered houses in the inner city as well as in the periphery. The plot size of informal housing units varies from 200-2000M^2 (ORAAMP, 2001). Bole, and Kolfe-Keranyo sub-city relatively have limited areas of unoccupied land and thus informal housing units have plot size less than 500M^2. On the other extreme part of Nefas-Silk Lafto and Akaki-Kality sub-city with vast unoccupied land, informal settlements have plot areas up to 2000 M^2 as compared to settlements built through formal procedure, and will be growing at alarming rate due to poor provision of land and inability of the Addis Ababa city government to respond to the situation.

The housing conditions of informal settlers in such localities are generally poor, or fair, but there are some that are in very good condition. Some of them have fair provision of services like water and access road; however, most of them still do not have appropriate road to be accessed. Regarding telephone service it is limited to some roadside developments, when service provisions are unaffordable the inhabitants share the cost of the available services and use them in common. The fact that water, telephone, electricity and linked transport services are available in these clusters of settlements in the neighborhood is a positive symptom that the City Government is tacitly recognizing the informal settlements but refrains from official pronouncement to encourage the existing and expansion of such settlements.

The problem, however, is that especially electric power supply is illegally acquired in most of the informally built houses. Some times the settlers dangerously do with risky electric power supplies distributed on lines from a single house to different housing cells. Informal settlement areas in Kolfe, for instance, are largely poorly built mud houses. Access roads are also poorly built, winding, narrow and hardly accessible by vehicles. The plot sizes are wide, irregular and the built up ratio compared to the plot area occupied is small. This shows that there is wastage of land as can be seen from the typical settlement pattern of the area.

Generally speaking, the nature of socio-economic profile varies according to the cause of creation, the site and duration. Those settlements created for accumulation of wealth, in the accessible site and those aged ones have better economic profile. Those which are established for immediate need of shelter on accessible sites have poor economic profile. As far as socio-cultural setting of the informal settlers of Addis Ababa is concerned, except some housing associations formed for the purpose of protecting their illegal establishments from bulldozing and which are trying to exert common effort for introducing infrastructure facilities, there has not been existing segmented cultural/ethnic profile peculiar to the informal settlement areas.

4.5 EXISTING SITUATIONS OF THE RIVERBANKS IN ADDIS ABABA

4.5.1 Physical characteristics

There are 7 major and 6 medium rivers, which are fed by 75 small river tributaries (Fig.4.2). The average area covered by the embankment of these rivers is about 70hectars. These rivers are mostly seasonal and start from north, north-west and north-east of the City and cross it south wards, and meet one another at various junction. Every river has its own peculiar characteristics. The major rivers are Kebena, Ketchene, Great Akaki, Kurtume, Bantiyketu, the medium rivers are Korsa, Bole, Kotebe, Harbu; Jemu and Beshale.

The study that was conducted eight years back by the Addis Ababa flood control project on major rivers depicts the physical characteristics of each and every river, among which the study area of Great Akaki river is the biggest of all rivers that crosses the City from north to south axis with a distance of about 35.6Kms length and ends up at Aba[7] Samuel reservoir (see map of the rivers on appendix 1). Along Great Akaki River besides the informal settlement different type of activities are undertaken now.

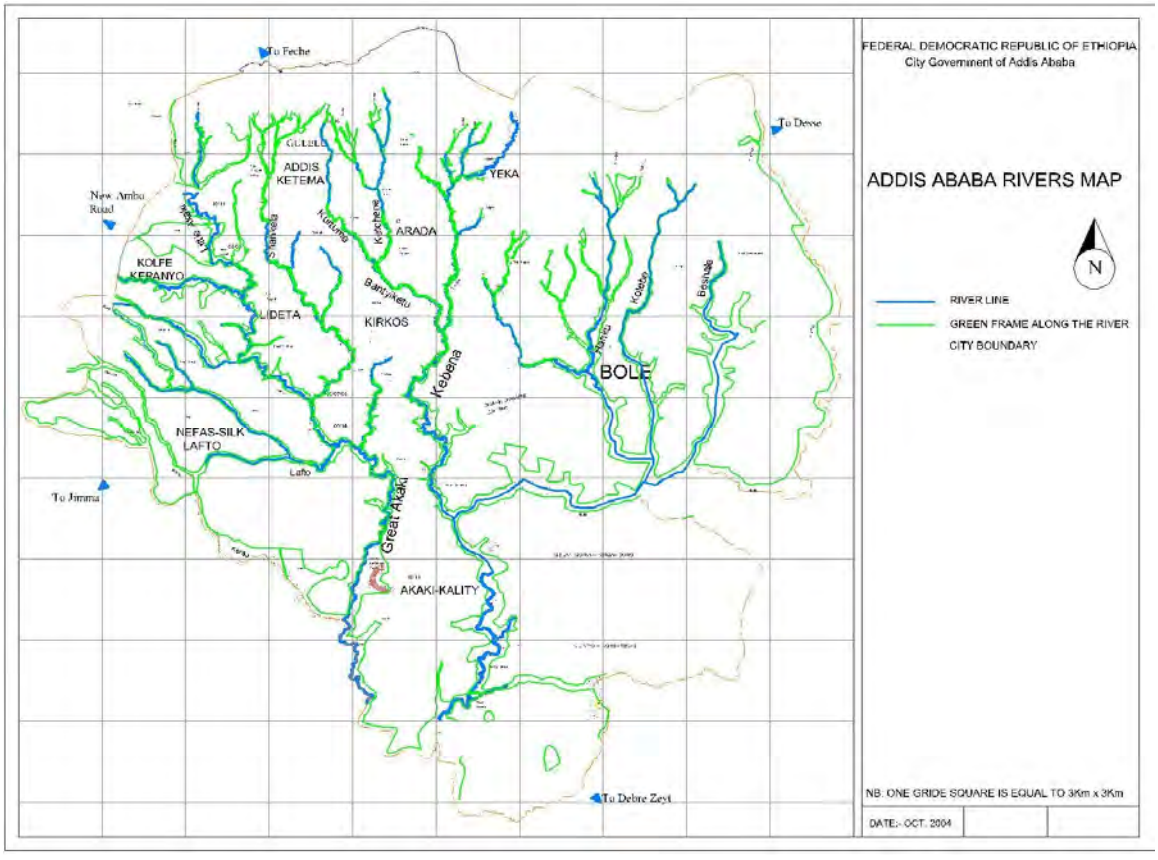


Fig.4.2 Addis Ababa Rivers Map

[7] Aba mean monk

4.5.2 Green frames

There is no as such reliable and updated information about the green frame except the revised master plan, which is very general to be implemented. The absence of dependable information, the lack of awareness of the citizen, inefficient urban management; and other related problem's have weakened the development and the protection of the green frame from the repeated flooding, soil erosion, sever deforestation, etc. This has resulted in unhealthy urban growth and environmental degradation and heavy loss of human lives; destruction of the physical and social infrastructures in the city. From the information available; out of the total urban land 47% is covered with green. The rate of deforestation; and the widening of the riverbank are very fast. Many indigenous trees are constantly being cut off for different activities without significant replacement. Many formal and informal activities such as shelter, industry, commercial, quarry, mixed farming and other related activities are being conducted along the riverbank and in the green frame.

The formal and informal activities along the rivers/riverbanks and green have positive role in creating employment and income generating opportunities; housing construction which increases housing stock; small scale (cottage industries), commercial agricultural activities are increasing the supply of goods and services with reasonable prices to the citizen. On the other hand these activities are disrupting the healthy urban growth of the city by misusing the scarce resources (land) increasing pollution of air and water, deforestation; and being informal they do not pay income tax; land rent and become the causes of the total environmental degradation.

The City administration in collaboration with Japanese experts conducted a detailed study in 2000. Regarding drainage and treatment of the rivers and the river waters, the City Administration Policy Study and Planning Commission also made green frame study, and recommended the implementation of the JICA study.

a) In renewal areas

The protection zone (green) along the river bank in areas proposed for renewal (centers and sub-centers) is proposed to be 100m i.e. 50m measured from the center of the river; out of the 50m protection (green) distance 5m will be for walkway; drainage maintenance and the rest 45m on each side will be protected as green (Fig.4.3A).

b) In up grading areas

In areas proposed for up grading; usually there will not be big physical change, the change will focus on the improvement of the social and health conditions of the community that need not big space i.e. improvement of access; toilet, water sanitation, etc. Thus the minimum buffer zone or protection distance is 30m i.e. 15m on each side of the river (Fig.4.3B).

A. IN BUILT UP AREA

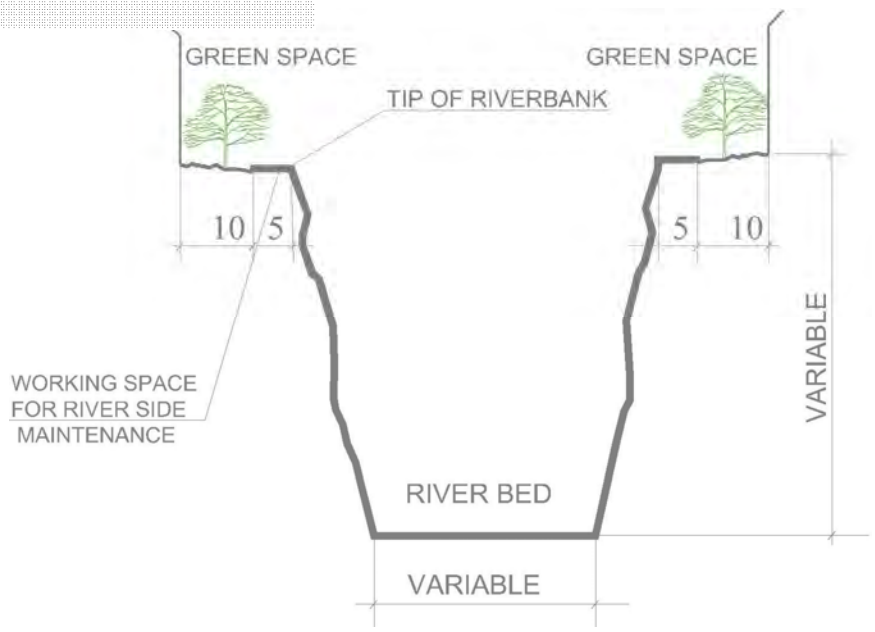


Fig.4.3A Illustrative section of rivers

B. IN RENEWAL AREA

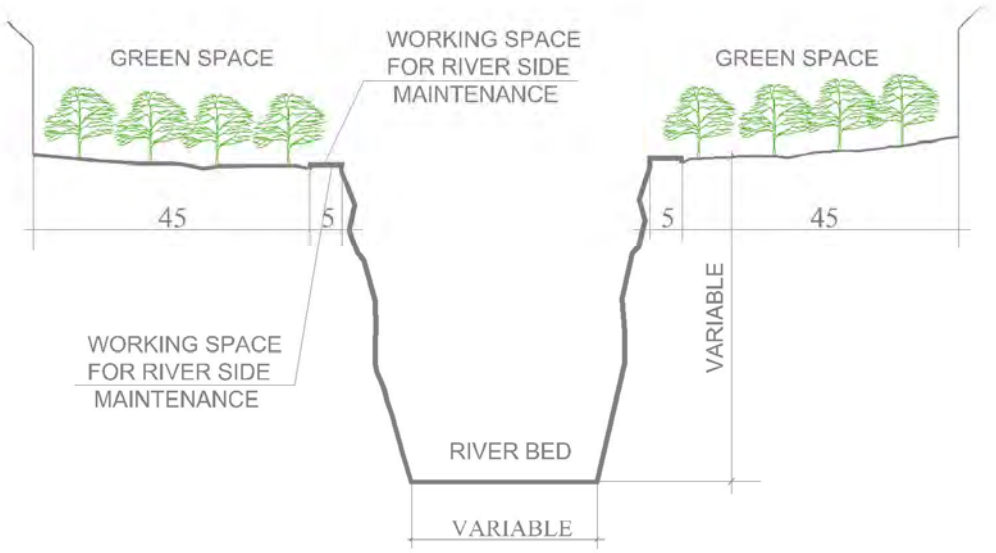


Fig.4.3B Illustrative section of rivers

4.5.3 Parks

At present there are 10 city parks (Table 4.4) administered by the Addis Ababa Sanitation, Beautification and Parks Development Agency with the area coverage of 113.89 hectares. In addition, there are 2 nursery parks in the City. Most of these parks are located along river lines. The government owned Biher Tsige park and the private one Jarra Park are located in Nefas-Silk Laft sub-city.

Table 4.4: Location of government parks in Addis Ababa

No	Park	Area (ha.)	Sub-city	Kebele
1	Hamele 19	16.8	Arada	01/02
2	Ambassador Park	0.89	Kirkos	15/16
3	Anbesaa Gibi Park	1	Arada	11/12
4	Bihere Tsige Park	40	Nefas-Silk Lafto	10/18
5	Maekelawi Park	35	Bole	04/06/07
6	Yeka	6	Yeka	08/15
7	Afincho Ber	1.2	Gulele	06
8	Golla	1	Lideta	12
9	Ferencay	5	Yeka	01/02
10	Sheger	7	Gulele	09/15
11	Bulbula Nursery Park	-	Bole	03/15
12	Kebena Nursery Park	-	Kirkos	01/19

Source: Addis Ababa Sanitation, Beautification and Parks Development Agency

Most of these parks are located along the river lines adjacent to the informal settlements and their contribution in regard to the environment protection and reducing the seldom damage caused by flooding is paramount. The biggest park, Bihere Tsige Park, is the only government owned park located along Great Akaki River. Beside, this park there are a large number of informal settlers dispersed in the surrounding area.

4.5.4 Urban agriculture

The water of the rivers in the City has been used for different purposes but the major one has been for irrigation purpose. The study which was conducted by the Addis Ababa Agricultural Office indicates that there are eleven vegetable grower associations that are performing irrigation along the major and minor rivers and their tributaries (Table 4.5). The total irrigation area is 262 hectares. On the study area there are two associations which are 1) Kolfe and Lideta area vegetable grower association and 2) Mekanissa-Furi and Saris vegetable grower association. The general feature of those associations is described on Table 4.5.

The harvest is twice a year. The river water is taken only during the dry season. The records of water intake from these rivers are not available. Urban agriculture has a significant role in the city's daily economic activities such as recreation; environmental conservation; employment generation for the urban poor, fuel and food supply. 'About 957 households" are engaged on river side agricultural activities.

Table 4.5: Names of Vegetable producers marketing service cooperatives in Addis Ababa

S. N	Name of cooperatives	Members			Land Area	Location
		Male	Female	Total	Ha.	
1	Shankilla River & Kacha Fabrica	41	11	52	8.5	Kolfe-Keranyo
2	Akaki and Kality	23	3	26	7.5	Akaki and Kality
3	Mekanissa-Furi Sarris	204	40	244	150	Kolfe-Ker. & Nefas-Silk La.
4	Kebena and Bulbula	25	6	31	7.5	Bole
5	Kolfe and Lideta	92	17	109	47	Kolfe-Keranyo
6	Ledeta	28	-	28	10	Ledeta
7	Mekana Biruh Tesfa	20	45	65	12	Akaki-Kality
8	Mekana Pensioners	17	5	22	5	Great Akaki-Kality
9	Fikre-Selam	60	5	65	5	Great Akaki-Kality
10	Yeabate and Enat Pensioners	126	99	225		Great Akaki-Kality
11	Chello	-	90	90	4	Great Akaki-Kality
	Total	636	321	957	262	

Source: Agricultural Development Department, Agricultural Bureau, 2005.

4.5.5 Flood hazard

It is characterized by intensive rainfall in short time and steep riverbed slopes. In addition, the river courses, especially in the middle reach of Great Akaki River, little Akaki and Bantyiketu including two tributaries of the Kechene and Kurtme are narrow owing to the construction of buildings along the banks. When heavy rainstorm occurs in the upper basins, water level in the middle and lower rises rapidly with a short period of time. The floods are considerably flashing with destructive flow velocities; deforestation in the mountains has also worsened the condition of water retention in the upper basins.

In 1978, 1994, and 1995 urban areas suffered from serious damages, the flood that occurred in August 1998 caused serious damage throughout Addis Ababa, especially in the Bantyiketu river system; 1,255 houses and 6,000 people were affected and most of them mainly people living along riverbanks and drainage lines were made homeless. Furthermore, 12 people were killed; kebele offices, vehicles and community facilities were also damaged. This incident frequently exists almost in a couple of year time, but the size of damage may vary in different locality. (The study on A.A. flood control).

After the serious flooding of August 1994, the former Addis Ababa Region Administration Office established the Addis Ababa Flood Control and Prevention Project Office (AFCPO) in September 1994. AFCPO was organized in line with the development policy of the national disaster and prevention and management for the target year of 2020. AFCPO was responsible for implementation of urgent flood control measures, investigation and implementation of long term measures to protect

the city of Addis Ababa from flooding, and to resettle people who were living in dangerous areas due to flooding. For a short period AFCPO principally provided studies, designs and tender documents for various project. However, the AFCPO was not fully setup; it was under staffed and did not have sufficient fund. The activities of AFCPO had been limited to design and supervision of local workers due to the absence of authorized flood control plan.

During the socialist period on the late 1970's or early 1980's, one project was implemented accompanying some resettlement program. The ministry of works and urban development operating together with the agency for the administration of Rental house prepared new land and low-cost houses for the resettlement program on Bole sub-city in kebele 08/09, which was conducted smoothly with out any social problem, the cleared area now being used as the site of Sheraton Hotel.

Fig.4.4. One of the project which was built by FAPCO in old air port site

Later in August 1994, there happened a disastrous flood making 462 families homeless, the Addis Ababa Flood Prevention Preparedness Office was put under an obligation to implement the resettlement of those people. The first stage of resettlement was to construct 6 Apartment houses of 4 stories for 120 families (Fig.4.4). The new land was prepared at 6 plots in Nefas-Silk Lafto sub-city, Kebele 03/04/05 about 3-5kms far from the original place. In 1995/96 fiscal years, a budget of some 15 million Birr was once allocated for the program but actual execution was not made. Before few years back with unknown reason the Addis Ababa flood protection was terminated the program and closed down its office.

CHAPTER- V:

CASE STUDY OF GREAT AKAKI RIVERBANK INFORMAL SETTLEMENTS

CHAPTER- V: CASE STUDY OF GREAT AKAKI RIVERBANK INFORMAL SETTLEMENTS

5.1 GENERAL CHARACTERISTICS OF THE RIVERBANK

Akaki River with a total length of 35.6kms stretches from Entoto Mountain ridge in the north up to Lake Aba Samuel in the south. It encompasses various activities on both sides (Fig.5.1). At the up stream point it is bounded by very dense forest, after a few distances travel it reaches to the North-West part of the city, to Asko area where different factories such as tannery, soap manufacturing plant, etc are located either on the edge or near by the river. Gradually it arrives to Kolfe locality where big riverbank informal settlements, namely Lome Meda (big in size informal settlement) and Sore Amba[8] (case study area No.1) exist. On the west side of the riverbank new type of informal settlement is carried out under Saint George church supervision while a mosque also plays great role in accelerating the growth of Lome Meda informal settlement by attracting followers and sometimes by also allocating land.

Passing through the new Ambo road bridge after going a few hundred meters to the south direction it arrives to Lideta vegetable grower's irrigation land and settlement. It is interesting to note that at every spot of informal settlement either of the two religious institutions have their own significant role in exasperating informality; particularly the share of Orthodox Church is great. In this neighborhood there is unique baptizing place of Kidane Meheret church where quite a large number of worshippers including other type of religion followers are always coming to such area to be baptized in order to get relief from their illnesses.

Subsequently, as one moves further down to the locally named Old Air Port area, a big quarry site which is administered by the Addis Ababa City Road Authority exists and following this a highly populated settlement of displaced former soldiers appears. Further down on very sharp steep slope surface new informal settlements have emerged here and there.

After the ring road bridge at Zenebework, Akaki River starts to serve the upper Mekanissa-Furi and Sarris vegetable growers' farmers located beyond AALEPO. The shallow embankment of the river continues for a few kilometers but this area is not adequate enough for any kind of function. However, in the previous period, especially during the Italian occupation period it was operating as an ammunitions depot. Further south in the Mekanissa area after the small bridge (case study area No.2) quite a large number of urban agriculture and animal husbandry exist side by side.

In some area behind Goffa military camp it seems like chaotic rural village, but rolling down towards recently developed Lafto neighborhood on the foot of the hill along the riverbank, a locality named Kosta village is found. This settlement further stretches up to Sarris liquor factory while the irrigation goes till the ring road. In between this activity a newly growing riverbank settlement has started to emerge on the gorge of the river. When the river reaches Kality Ring Road Bridge on one side of the river edge two extremely huge tannery plants exist.

Down to Kality treatment plant adjacent to the river bank (case study No.3) a large

[8] Amba and Sefer are common names for settlements/or villages

number of people are using the treated water that comes out from the treatment plant for irrigation purpose; however, unlike other settlements here residential houses exist in a dispersed manner. Eventually, when it goes further down no residential neighborhood exist; instead a very wide irrigation field and animal husbandry appear on flood prone areas.

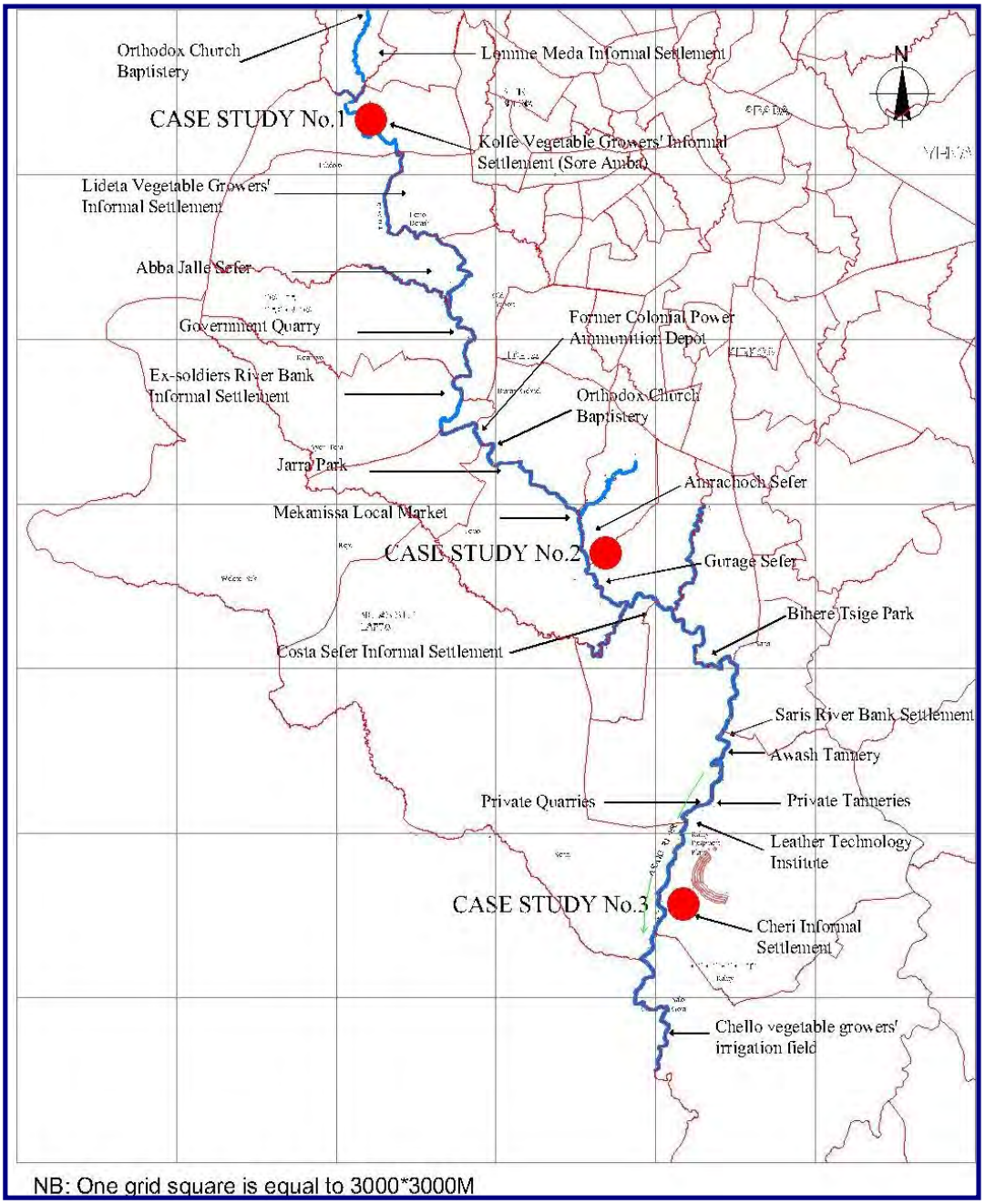


Fig.5.1 Location of Case study areas and activities along Great Akaki Riverbank

After assessing the literature part of the study and made physical observation on the overall river side developments such as settlement patterns, activities of the settlers and some institutions I found out the role of vegetable growers is immense. It is paramount to select specific areas to study the peculiar aspects of riverbank informal settlements. Among the settlers which are well organized and their means of

subsistence and habitable spaces are highly dependent on the riverbank are the vegetable growers. Thus to get full information and explore the characteristics of Great Akaki riverbank informal settlements three case study areas i.e. upper, middle, and lower part have been selected.

In each case study area different scenarios were observed, however, to respond to the stated questions it is quite significant to deal with specific issues. Therefore, physical characteristics, socio-economic aspects, environmental characteristics, and political and legal aspects were assessed in detail.

5.2 CASE STUDY AREA No. 1 Sore Amba informal settlement

5.2.1 Description of location

Kolfe vegetable growers' informal settlement, locally named Sore Amba, is found in Upper Akaki Riverbank at the north-west part of Addis Ababa in Kolfe-Keranyo sub-city, kebele 10/11, about 4.6kms away from the commercial core area Merkato (Fig.5.2). It lies on an approximate area of 33.5hectars land on a very wide river valley bounded by dense forest on the west, extremely compact Lome Meda informal settlement on the north, by newly flourishing informal settlement on the south, and on the east by a very compact and organic type semi-formal and informal settlement pattern**.**

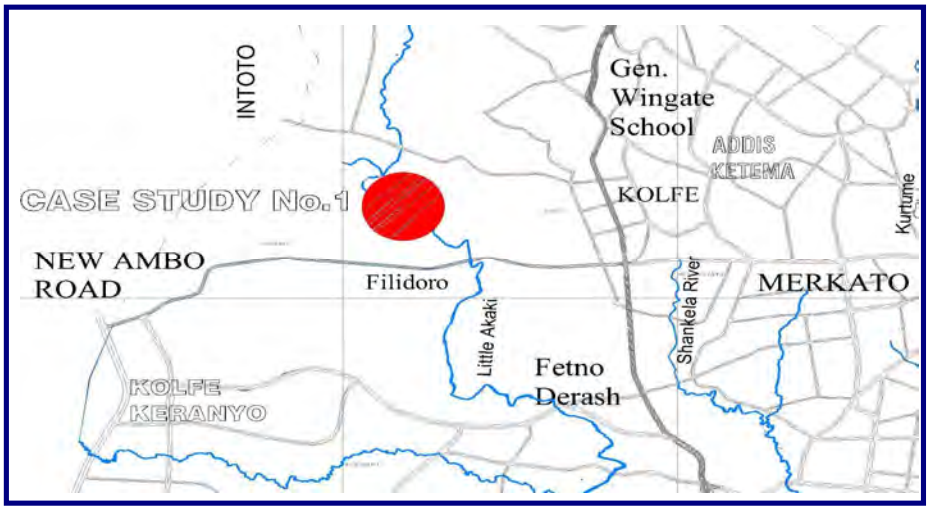


Fig.5.2 Location map of Sore Amba

After few seconds drive from the Kolfe ring road roundabout, on the right side of the street the gravel road leading to the north-west direction stretches up to the Sore Amba kindergarten. As one looks down from the hilly surface of this School it has a very good panoramic view consisting of different types of landscapes. The river that crosses the area has divided the settlement into two parts: informal settlement and irrigation field on one part, sprawling houses along the river bank on the other side (Fig.5.3).

Fig.5.3 View of Sore Amba

5.2.2 Physical characteristics of Sore Amba

A) Physical characteristics

As one of the oldest residents of the village W/ro Wolete Nisrane aged 91 years told me Sore Amba was founded on the water front of the Upper Akaki Riverbank in Kolfe area during the Italian colonial power occupation period. A group of people who came from the northern part of Ethiopia accompanying the colonizer military force were the first to settle here. She began narrating the past history of the area "one of the first settler who had initiated people to settle and began to live and work here was Ato Sore, he was my husband who came from Tigray region". The area was very close to the old settlements such as Lukanda and Atana Tera as well as to the big market place Merkato. Settlers cleared the dense forest land and started their new way of life on marshy land using the river water for irrigation and for animal husbandry purposes. Adjacent to the farm land residential blocks were randomly built over the plain and hilly terrain.

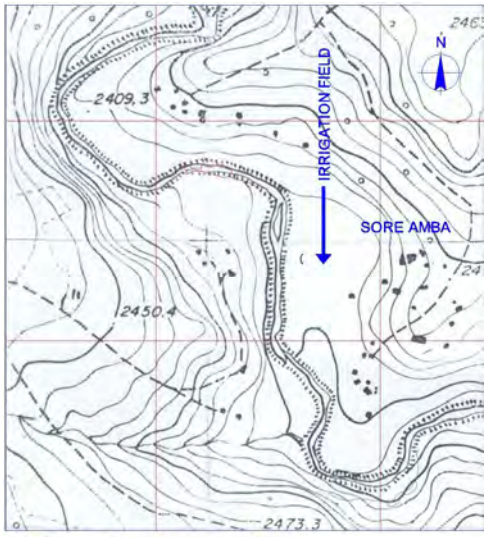


Fig.5.4 Sore Amba in 1986

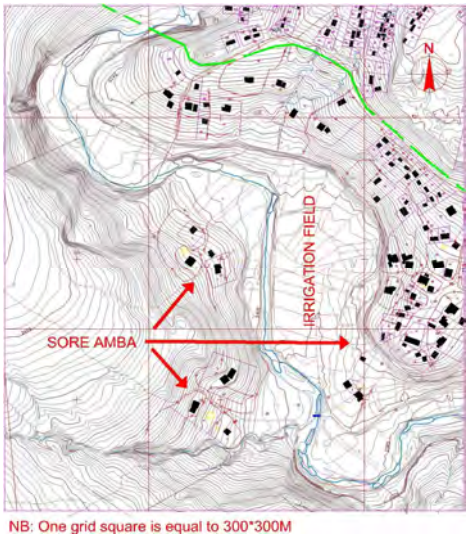


Fig.5.5 Sore Amba in 1995

Fig.5.6 Sore Amba in 2005

Subsequently, during the Imperial era different ethnic groups were also attracted to the area specially the Gurage tribe. Hence, latecomers dominated earlier settlers; irrigation space became widened and settlement place was also enlarged. Parallel to this on the north and east direction new houses and some other firms were established, and infrastructures were installed to provide services. The physical transformation of the settlement in the past twenty years has shown a dramatic change from irrigable land to residential plots. Especially in the last one decade as figure ground maps have shown it reached to unprecedented scale (Fig.5.4, 5.5, & 5.6).

During the socialist period since there was a policy for access to land for free provision of land was relatively easy the question of informality had not been raised and even it was not discussed as a big issue in the concerned government offices. On the contrary when the military government was overthrown and EPRDF took power all socialist system state structure had terminated and new political system more liberal and free market economy emerged. Land became one of the economic backbones of the government. It was leased out with big sum of money, so acquiring free of charge habitable space become unimaginable. Besides, so many reasons such as lack of finance, government bureaucracy and some unknown factors people in mass were forced to live illegally on government uncontrolled area like Sore Amba.

B) Infrastructure

Road net-work

Sore Amba is approached on the south-west direction by 8meters gravel road from the newly opened Addis Ababa-Ambo road. The street network is a clear demarcation line between the formal and informal settlements. When we arrive to Sore Amba vehicular access terminate at the last point of formal settlement then spider-web foot paths and donkey passages overtake the motor routes. Foot paths ranging from a minimum of one meter to three meters connect different dispersed settlements and irrigation fields (Fig.5.7). There is an old wooden bridge (Fig.5.8) which is leading to the other side informal settlements, from few years onward since it does not function properly the community has raised finance and started to construct new concrete bridge (Fig.5.9).

Fig.5.7 Foot & donkey passage

Fig.5.8 Old wooden bridge

Fig.5.9 New concrete bridge

Electricity and water

Though it is very close to the most dynamic commercial center Merkato, the availability of very crucial facilities are under question. EEPCO has provided electricity without looking any preconditions for those who are capable to pay at once or in a long-term credit. More than 90% of the residents have access to electricity, either private or communal. Electricity is very expensive hence very often almost all settlers are forced to use it only for lighting, not for cooking and heating. The nearby dense forest is the major source of energy used as firewood for cooking their daily meals. In addition gas, paraffin and fossil fuels are used by the community at large.

Fig.5.10 Public water tap

Like electricity the demand of potable water in the locality is very high; however, due to lack of piped water in the settlement the inhabitants are forced to go long distance to fetch water from their nearby neighborhood. There is one communal water tap (Fig.5.10) but some times when there is a total shortage of water in the area settlers are obliged to travel long distance in search of potable water.

Within a walking distance outside this settlement there are communal water taps. The inhabitants use clean purchased water only for drinking and cooking, while the river water is used for irrigation, bathing and washing some household items. In the settlement there are 449 households out of which the distribution of basic services such as electricity (Fig.5.11) and water (Fig.5.12) are shown on the following graphs.

Fig.-5.11 Electricity Distribution

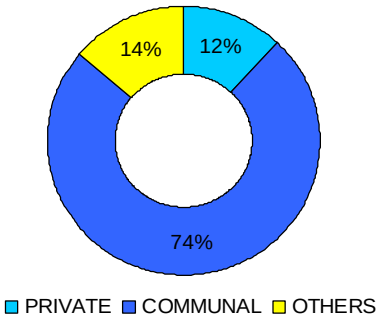
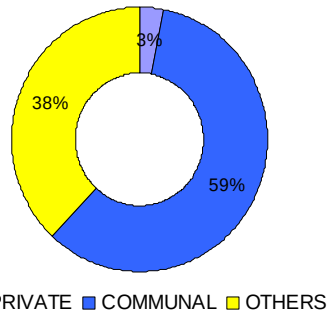


Fig.5.12 Water Distribution



C) Public health

The highly dilapidated and new housing arrangement, spontaneous population growth, inadequate provision of basic infrastructures and lack of consideration by the government bears a negative impact on the overall neighborhood sanitation. In some old housing blocks for every two or three housing unit's one communal dry pit latrine covered with plastic tent serve as a temporary toilet. The majority of inhabitants use the river, open air, and the forest for defecating because they lack proper sanitation facility. In recent years, since land cost escalated tremendously irrigation fields as well as forestland have been completely converted in to residential use; as a result the magnitude of residing on compact space has become very prominent.

The lack of taped water and its inaccessibility of acquiring clean water forced the inhabitants to use river water for washing clothes, and bathing (Fig.5.13). These situations plus the presence of excessive contaminated water have endangered the health condition of settlers. The major potential negative impact of polluted water is an increase in the incidence of water-related diseases and infections. Pollution of surface water by human and animal execrate, toxic chemicals discharged from industrial and domestic sources, have both acute and chronic effect on health, as well as, on the different kind of vegetables grown in the area. The most common infectious disease-affecting children are diarrhea, influenza, coughs, skin diseases and cholera. People who habitually use river water for bathing are subject to all kinds of skin diseases. Respiratory tract infections are common among children and old people, caused by humid conditions and cramped living quarters with insufficient sunlight and ventilation.

The livelihood of the community is precarious; the level of awareness to protect their surrounding is at the minimal stage. The settlement being very close to the commercial core area the transmission of contagious diseases; particularly tuberculoses, is highly possible. Beyond that the pandemic disease HIV/AIDS also killed quite large number of people; especially the working age group is highly affected.

Fig.5.13 Ladies washing clothes

D. Blocks, fence and density

Unlike open spaces and expansion areas Sore Amba Riverbank informal settlement has its own peculiar characteristics. On both sides of the river an organic physical feature of block arrangement interconnected one from the other with a very narrow spider web like foot paths (Fig.5.14). The physical feature of the settlement and being far from basic services bears negative impact on the overall development, and does not permit to have proper block arrangement as well as provision of adequate accessible roads. Any one who would like to reach the central part of the settlement could not be able to use any type of motor vehicles.

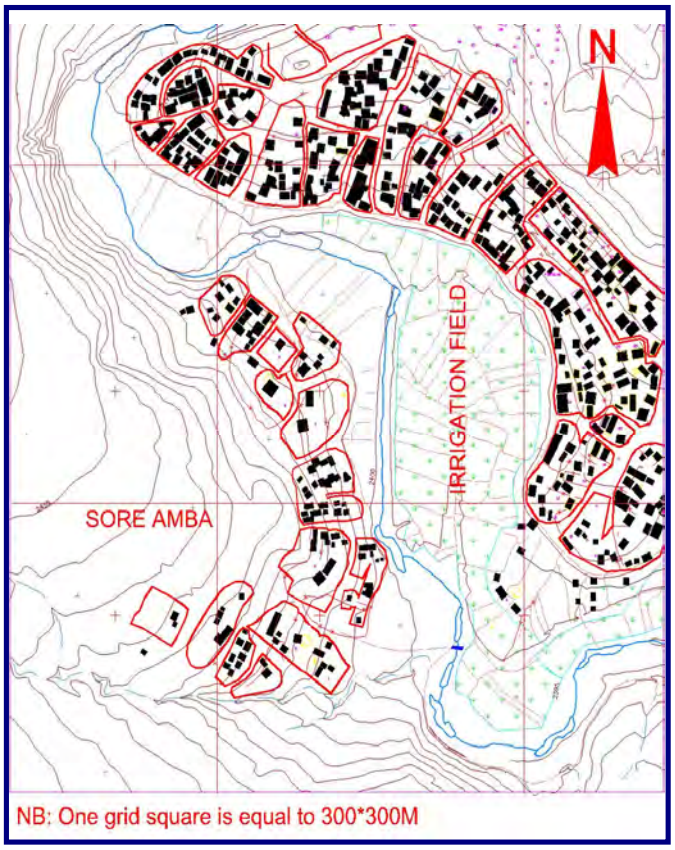


Fig.5.14 Sore Amba blocks arrangement

Fig.5.15 Plot sub-division

NB: Plots and blocks arrangements are irregular in size, and shape.

The size of every block varies one from the other both in area and density wise. Regarding area beside irrigation field, the minimum size is 0.13 hectare, and beyond the river it is 0.07 hectare, while the maximum size ranges from 0.35-1hectar. Like blocks plots were arranged without following any geometrical pattern, they parceled randomly (Fig.5.15). Regarding plot area the minimum size is about 115M^2 meter and the maximum is 3565 M^2.

As it is physically observed the area is demarcated from the neighboring formal settlement by irregular street pattern, which is mostly covered with gravel road and partly with paved stone masonry. The entire community since they are always living and working in the area of under fear of eviction and lack of security both inlet and outlet passages are not properly laid-out, housing arrangement are not systematically built, they were erected either at the middle or else at the corner of every compound, In some blocks plots are well defined with temporary fencing

materials like eucalyptus and other wooden components or else they may be left open. On the contrary, on the other blocks regardless of boundary between plots most houses are built on very wide plots, laid in a staggered manner without any geometric consideration and orientation. Moreover, each and every block consists of different number of houses. Generally, since the area is very close to Merkato it is highly congested and the average housing density is 645people/hectare.

E) House types

The informal settlements on riverbank area, despite their illegality and lacking of government support, houses have been built randomly in a similar manner. In the earlier period the physical content of the building is mostly determined according to the goodwill of the landlord and immediate need of settler as well as their financial capacity. In Sore Amba housing falls in to two categories; the first one, which was built in the earlier period by the vegetable growers has its own peculiar characteristics; almost all houses lie on flat surface. Each individual house has sufficient habitable rooms and the room sizes are moderate. Even though, the construction technique is fully in mud mortar some part of the structure is rigid: foundation is masonry, flooring is cement screed, walling is eucalyptus or other type wooden frame, and the roofing is in corrugated iron sheet.

The recently built informal housing units are located on the irrigation field, edge of the river and on hilly terrain. Some of them, due to continuous flooding and land degradation, part of their structure are suspended on the air as a result they are always under fear of collapsing. There are some similarities between the earlier dwellings and the present building techniques: use of eucalyptus as walling material, mud as mortar and plastering. On the contrary, when we see the foundation and flooring there is no as such proper foundation; simply the eucalyptus splints stood at a shallow depth, and polyethylene sheets, sacks, plastic tent or corrugated iron sheet shed roofing.

Cooking is mainly done outside but some have shelters. The toilets and bathing places are either within their compound by digging dry pit latrine or outside their home along the riverbank. Usually, in the informal settlements construction has undertaken after working hours, during week-end, and holidays. There are three steps in the settlement formation; the first step erecting eucalyptus splint (Fig.5.16), next stage roof covering with plastic tent (Fig.5.17), and the last step is wall plastering performed with chika mortar (Fig.5.18).

The area is frequently hit by flooding: at times houses, domestic animals and even human being are drowned by flood. The flood also creates health problems. In the 1990's there was a program to tackle the problem of flooding; but it was discontinued for unknown reasons. Currently the holding of residents is diminishing, housing condition is deteriorating year by year so as to sustain their livelihood they sell part of their vegetable fields to new comers. The condition of houses is deteriorating year by year.

Fig.5.16- 1st stage wooden Wall erection

Fig.5.17- 2nd stage plastic roof cover

Fig.5.18- 3rd stage settlement formation

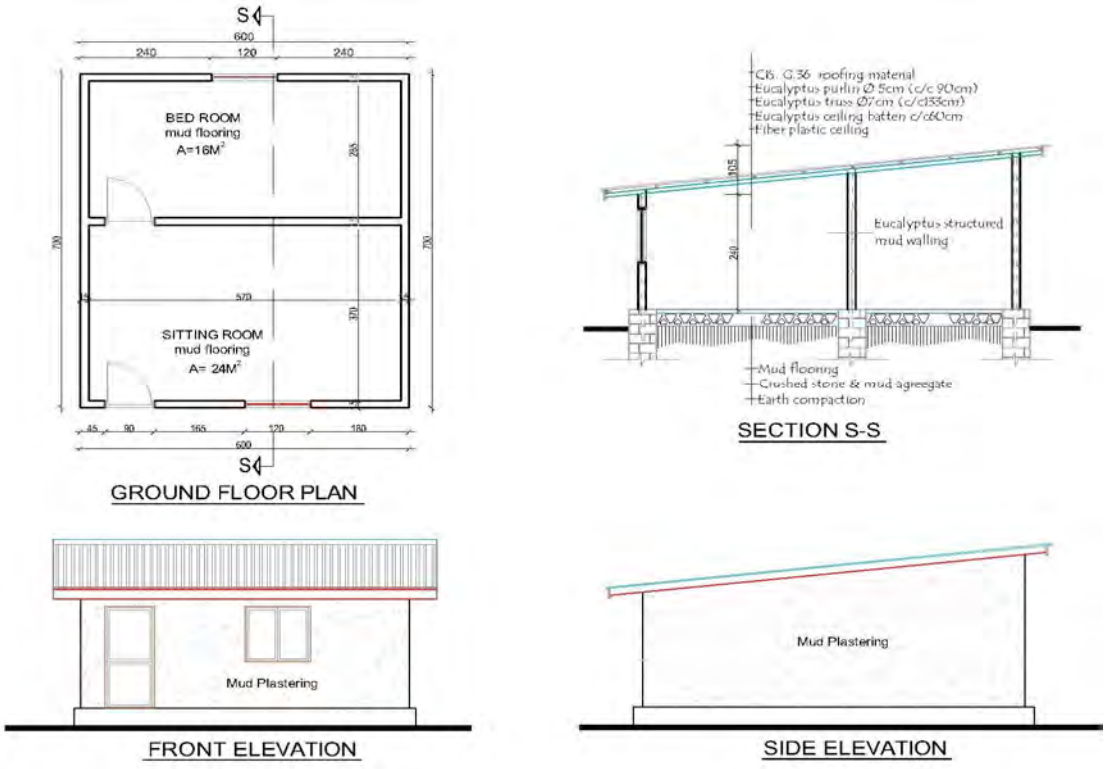


Fig.5.19 Typical house plan of Sore Amba

The typical house plan consist one sitting and one bed room covered with shed roof (Fig.5.19). In the settlement out of 449 houses nearly three quarter of houses are under poor conditions while the rest categorized as fair and good status (Fig.5.20).

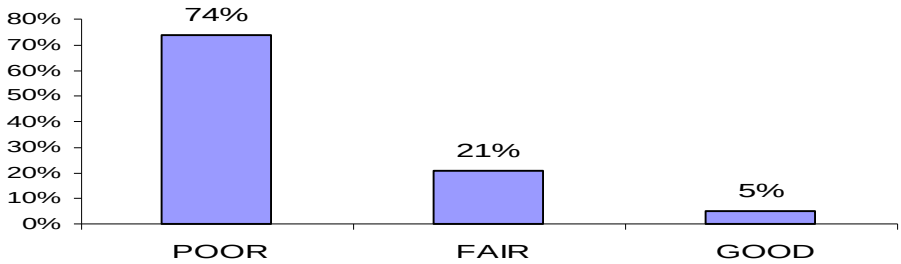


Fig.5.20 Housing condition

5.2.3 Socio-economic aspects

A) Socio-economic

The first settlers and founder of Kolfe vegetable growers association were mostly Guage ethnic group; they have been performing both irrigation (Fig.5.21) and some other activities in the area for years. Due to lack of modern irrigation system and inadequate infrastructure the area was not as such appealing for cultivating various vegetables. In fact, some initiatives had been undertaken by the then Socialist government to strengthen the capacity of the farmers and to alleviate the food shortage created during the 1984 drought, among which the Agriculture office had provided fertilizer, better seeds and training, EEPCO has supplied electricity to all areas without any precondition, Addis Ababa municipality provided shopping place at Mesalemia for communal use of various Addis Ababa vegetable growers associations, and these activities have continued till the fall of the military government.

Fig.5.21 Vegetable growers' on Irrigation field

As time passed by new comers' arrived to settle in Sore Amba. These new comers are mostly of Gamo ethnic group who were forced to leave there previous area due to unaffordable house rent and other expenses. Thus, earlier settlers have got very good opportunity to have affordable rental houses and ample space for house construction. Initially land cost was about 15Br/M^2 but gradually especially now days through the channel of brokers it risen up to 70Br/M^2.

Fig.5.22 Child weavers on duty

The new comers are mostly engaged in weaving and also work as daily laborers, guards, hawkers, and some other activities. When I visited the central part of the settlement I observed in a very small room a lot of children particularly of Gamo origins were very tightly sitting on an excavated mud flooring to perform weaving activity (Fig. 5.22). Usually, child labor without any time limitation and they are highly exploited by few Self-centered individual shema[12] traders.

Parallel to this on the other side of the river a very dense forest has been cut down by the inhabitants, and delivered with a chip price to the local Atana tera market. In this area since it is far away from any basic infrastructure some hidden activities are performed on open space, among which two private cereals byproducts merchants have employed more than fifty daily laborers partly from this settlement, and the rest from the near by neighborhoods. They are engaged in sieving the local food stuff mainly teff byproduct which is collected from different flourmills (Fig.5.23). After a certain processes they automatically send to the wholesale market place ehileverandah for sell with a minimum discount from the pure yield. Besides, street vendors, illegal activities, and some other jobs are also undertaken at a huge scale.

[12]Shema is traditional cloth made of pure cotton

Moreover, due to organic characteristics, ragged geographical features and being away from the main route donkeys are used to transport goods while people have to travel on foot.

According to Ato Muzeyen Mohamed head of Kolfe Selam Ber vegetable growers' explanation the association consists of 56 households with a total population of 336 persons engaged in irrigation. In the entire settlement there are 449 households including vegetable growers living within the settlement and working either within the settlement or somewhere else. Their religion compositions and educational back-ground are different, more than 50% of the total population is followers of Orthodox religion, above 30% Muslims, and the rest worship other religions.

Fig.5.23 Open air foodstuff byproducts sieving

Regarding income almost all of them earn below Birr 500 per month. The overall compositions of the settlement including other settlers who are engaged in different employment sectors are categorized under low economic class and this is testified through random survey, interview and questioners. Generally the following table (Table 5.1) indicates the total number of population, age and religious category. Whereas, regarding employment status 32% are engaged in self help activity (Fig.5.24), in terms of education 44% of the inhabitants are illiterate (Fig.5.25), and among the total residents 59% earn below Birr 200.00 per month (Fig.5.26).

Table: 5.1 Population, Employment and Education

Population, Age category and Religion									
No. of population			Age				Religion (%)		
Male	Female	Total	0-14	15-20	21-54	>54	Christian	Muslim	others
1437	1259	2696	673	452	1334	287	57%	35%	18%

Fig.5.24 Employment status

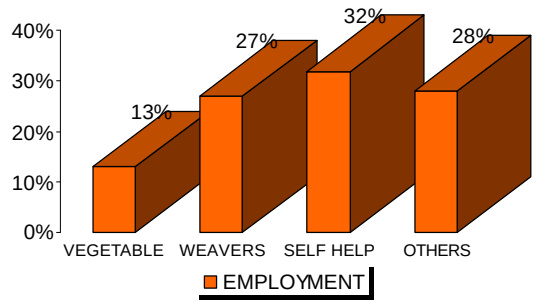


Fig.5.25 Educational status

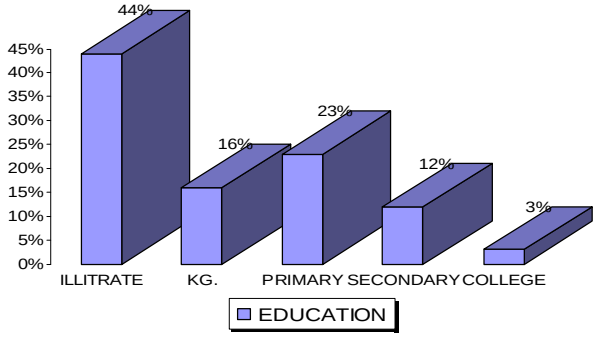
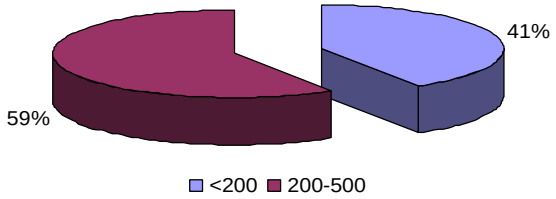


Fig. 5.26 Income group



B) Social amenities

Social service and activities vary based on location, recurrent development, Master plan proposal and government short and long term intention to that specific settlement or its surrounding areas. Among the oldest settlements in Addis Ababa Kolfe area has accommodated different activities and public services at walking distance. However, major activities and services which are technically supported and financed by the government body, non-governmental organizations are totally located in the nearby formal settlement.

Fig.5.27 Children in school

One small kindergarten which does not accommodate the present need of the settlers exist within the settlement (Fig.5.27), and at a walking distance in the formal settlement area there exist one elementary school and Kolfe comprehensive high school is also found within the same Kebele. In terms of health facility there is only one health center about 1Km far from the settlement, while for shopping they may travel either to the nearby neighborhood Kolfe shopping center or a bit far Mercato.

5.2.4 Environmental characteristics

The natural environment that surrounds any one being is important not only for their health but also for social livelihoods and eco-system as well. There are certain environmental factors that directly affect Sore Amba. The settlement is located on steep slope and marshy land adjacent to Akaki River. In recent years the new settlers have extensively cleared large part of forest area and irrigation field for constructing their habitation space. This dramatic conversion of land functions without any government approval has brought huge repercussion on the overall environment.

Most of the time the inhabitants who live in the settlement are cutting down trees for producing charcoal as a source of energy, as building material components, financial income by selling it to the nearby wooden market area (Fig.5.28). The youth group is an active participant in every aspect of the society, during construction period they collect red soil by digging nearby site (Fig.5.29).These situations are leading to endless deforestation, as a result, increasing soil erosion, frequent flooding, and desertification. At present it is physically observed that the damages which arise due to erosion are a lot among which the eroded land is becoming unproductive, increase in the volume of runoff surface water, and the contaminated water used as a harbor for water born dieses like typhoid and amebic dysentery, loss of indigenous plants, different wild animals, and aquatic species are already extinct from the surrounding areas (Fig.5.30). On the other hand, from the upper catchments area very frequent flooding has arrived and harshly affects the settlement by demolishing residential houses, vegetables and sometime animals and human being are taken away to the lower part of the river.

Fig.5.28 Wood market place

Fig.5.29 Red soil excavation For home use

Fig.5.30 Flying & swimming birds

Regarding waste management the use of pit latrines may pose a risk of polluting ground water and in some cases when it rains all waste from the pit latrines, and neighboring septic tank may go in to the river where people go to bath and wash. Bushes, and open spaces used by households as waste disposal and urinating sites, which paves way for breeding ground for diseases.

The Federal Democratic Republic of Ethiopia in 3rd of December 2002 issued two proclamations which are Proclamation No. 299/2002 and Proclamation No.300//2002. The first one dealt with Environment Pollution Control and the second one focused on Environmental Impact Assessment. Following these proclamations the Addis Ababa City Administration has given full right and responsibility to Addis Ababa Environmental protection Office to keep up riverbank area by providing title deed and facilitated to work in conjunction with the Kebele law enforcement body, police force, agriculture office, Clean, Beautification and Park Development Agency and some governmental and non-governmental organizations. Nevertheless, due to lack of finance, proper demarcation of riverbank green frame on the ground, skilled man power, and some other constraints still nothing has been done in the area to materialize all its power and duty.

5.2.5 Political and legal aspects

A) Political aspect

The settlement serves as a true political instrument for getting major political support from informal settlers like Sore Amba. Any negative interference or change by the political party with regards to the settlement would mean loss of total political support from the settlers. This has been widely observed when there is a political rally and at the time of election, settlers are not willing to participate and not provided their vote to the governing political cadres unless they get recognition from the government side. An interview made with representative of local authority said that even though we do not give house number to the illegally built houses we have been treating them by proving identity card and this serve as a sign of recognition for the settlers. Some time when there is an agenda to demolish houses unless the City administration facilitates some pre-conditions strong resistance always come from the inhabitants, non-governmental organization like Red Cross, Human right watch, and some other groups. Thus, the demolishing process gets halted by different constraints from time to time.

B) Legal aspects

The Civil code of Ethiopia proclamation No.165 of 1960 declared on section 2, article 12 every person is free to establish his residence wherever it is suitable for him and to change the place of such residence. In addition to this under title 7 chapter 1 article 1168 has also emphasized regarding ownership right on land; the possessor who has paid tax for fifteen consecutive years to immovable property become the owner of such immovable item. Whereas, in respect to water right in Art. 1228-1256 rivers are public domains where the community shall have the priority in the usage of all running water for irrigation or other purpose.

Regarding planned areas under Chapter 4 Art. 1540 elaborated; no person may construct a building within the town planning area unless he has given notice of his intention to build and been granted a building permit in accordance with regulations. Subsequently, during the provisional military government urban land and extra urban houses were entirely made public property under proclamation No.47 of 1975, Chapter 2 Art.5 No.1 states any person or family may, in accordance with directives issued by the ministry, be granted the possession of urban land up to 500 square meters for the purpose of building a dwelling house, but this size would no longer stay. This period was the time where the vegetable growers' were well organized by the then Ministry of Agriculture and get any facility including use right of irrigation land. However, since the area was considered by the Ministry of Urban Development and Housing as farming area without the knowledge of the Ministry they simply erected their dwellings adjacent to their farming plot.

Before ten years ago the City administration had established Flood protection office to protect the flood prone area. This office had been forwarding some positive measures in the settlement; as a result most of the settlers who were settled on the flood prone area were displaced to the upper dry land. In such period as well as before and after the implementation of the recently revised structural plan two regulations were issued partly to give recognition for those informal settlers who settled on planned area for residential activity, and partly to demolish specially those who settled against the laws and regulations of the previous master plan and the present structural plan.

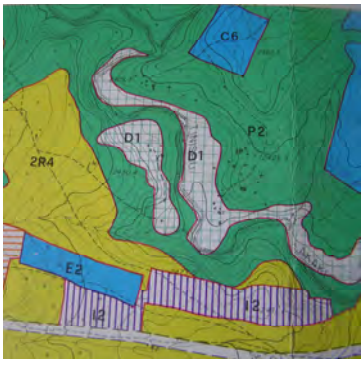


Fig.5.31 Addis Ababa Master Plan in 1990

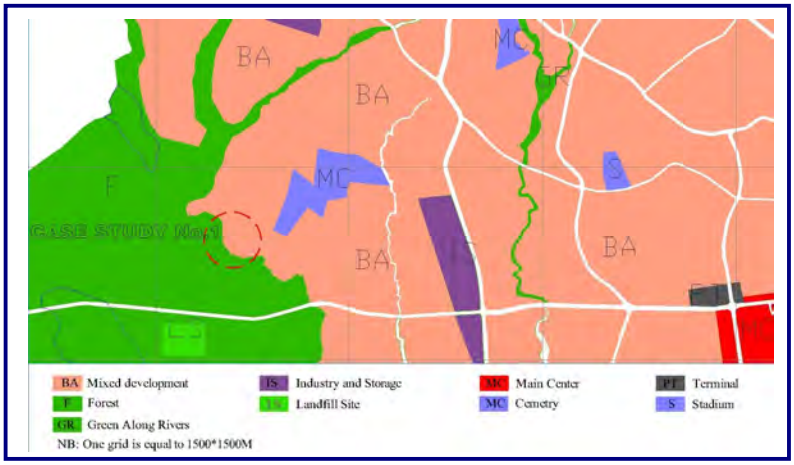


Fig.5.32 Addis Ababa Structural plan in 2002

In the previous master plan (Fig.5.31) both sides of the riverbank were delineated for horticulture purpose, and the rest part was left for informal green, whereas the recently revised structural plan of the city (Fig.5.32) indicated eastern part which is very close to the existing Kolfe settlement is proposed for mixed use development, while the western part for forestry. This shows that according to the present structural plan, green frame study, and two regulatory frameworks mainly those who settled within 50meters distance from the tip of the river, and on land allocated for forestry might have fear of displacement. On the other hand, those who built their house before the pronouncement of regulations and those which do not violate the structural plan and ratified Environmental protection laws may have a possibility of getting title deed. Although, these regulations were introduced to facilitate use right of land to the settlers due to long and hectic bureaucratic procedures except very few inhabitants the majority are still waiting to collect their title deed or may not go due to financial or other constraints.

5.3 CASE STUDY AREA No. 2: Amrachoch and Gurage sefer

5.3.1 Description of location

Mekanissa vegetable grower's informal settlement is located in the mid stream of Akaki River at Nefas-Silk Lafto sub-city in kebele 09/14 locally named Amrachoch and Gurage sefer. The area is located, at the south-west part of the city on an expansion area about 7.2kms far from the central part of the city, on an approximate area of 27hectars of land just behind Goffa military garrison (Fig.5.33). The area is bounded by Mekanissa Liquor factory in the north, by Kosta sefer informal settlement in the south, and on the west after crossing the river by the Ethiopian Evangelical Church premise staff residential quarter and small scale cottage industry.

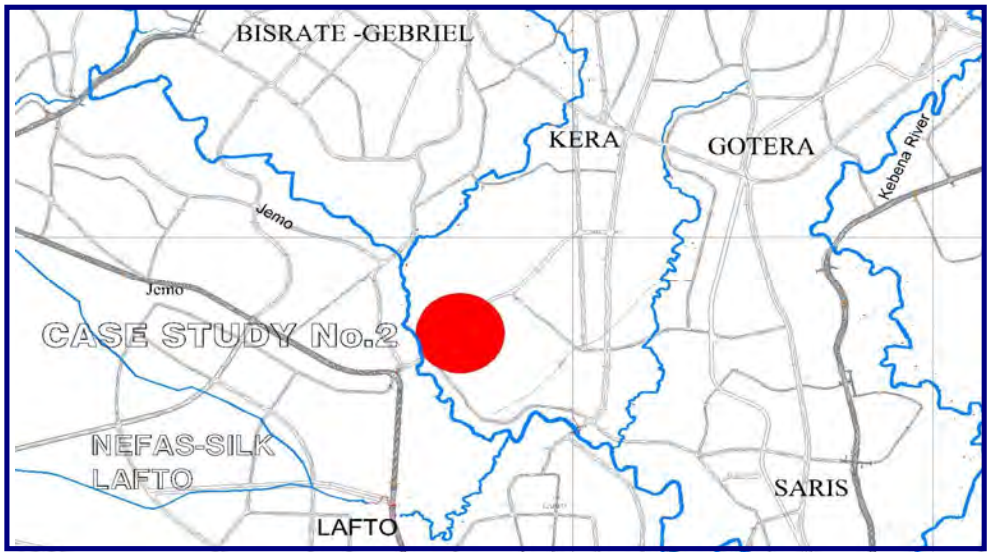


Fig.5.33 Location map of Amrachoch and Gurage sefer

5.3.2 Physical characteristics of Amrachoch and Gurage sefer

A) Physical characteristics

Ato Gettu Yirga inhabitant of Mekanissa, aged 45 years currently serving as secretary of Mekanissa-Furi and Saris vegetable grower association was born and had grown up in this settlement. According to Ato Gettu before the Italian invasion only the Oromo pastoralists were using the area as a grazing field. But, during the Italian occupation since its geographical locality is flat land and suitable for irrigation activity various foreigners such as Armenians, Greeks, and Italian nationalities first came to settle and established modern farming and industrial building on the riverbank and its environ. The residence of one of the early settlers, Mr. Adonis of Greek origin residential building still exists behind Goffa military camp. He was the most prominent person who had been employing many daily laborers including my father to perform irrigation, animal husbandry, and bee keeping. At that time since the locality was far from the city center industrial building, like liquor factory, was erected along the river line for an easy discharge of liquid waste. Some religious institutions like Ethiopian Evangelical Church established residential quarters and small scale industries while others erected small scale cottage industries.

According to Ato Gettu following the evacuation of colonial forces when Emperor Haile Selase I took power, his father was still working with his former chief. Parallel

to this some other vegetable growers had also got rentable land on the bank of the river from the former landlords with negotiated price. In addition to this, adjacent to irrigation space and around the farm laborers started to construct their residential houses with temporary building materials, some developments had began to flourish on the surrounding area like the present slaughter house, garages, warehouse, Goffa military garrison. Massive influx of people especially those who came from southern Ethiopia particularly of Goffa origins took the highest share of settlers, starting from that day the area was named as Goffa sefer.

Immediately, after the fall of the monarchy when the military regime ruled the country urban land which was under the command of few landlords was confiscated then vegetable growers who worked over the land got use right. Consequently, an appealing atmosphere from the government side to the farmers pulled a large number of new farmers to the area to get parcel of land along the riverbank area. They got organized and established Mekanissa-Furi and Sarris Vegetable Growers Association in 1977. Since then the association office as well as farmers were getting full technical support, fertilizer, seeds and some other assistances from the government to enhance productivity.

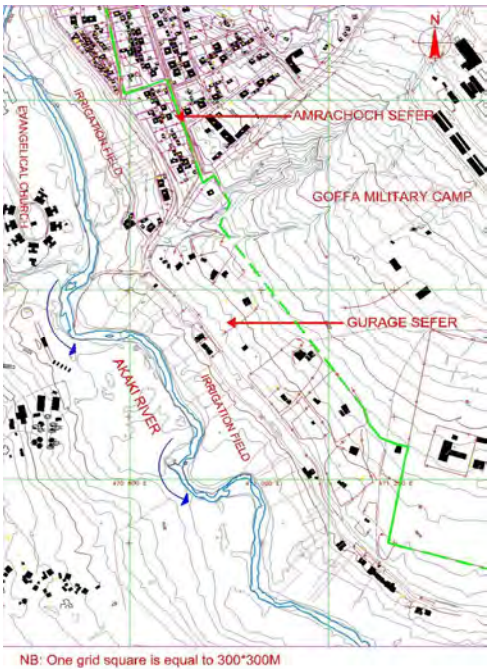


Fig.5.35 Amrachoc and Gurage sefer in 1995

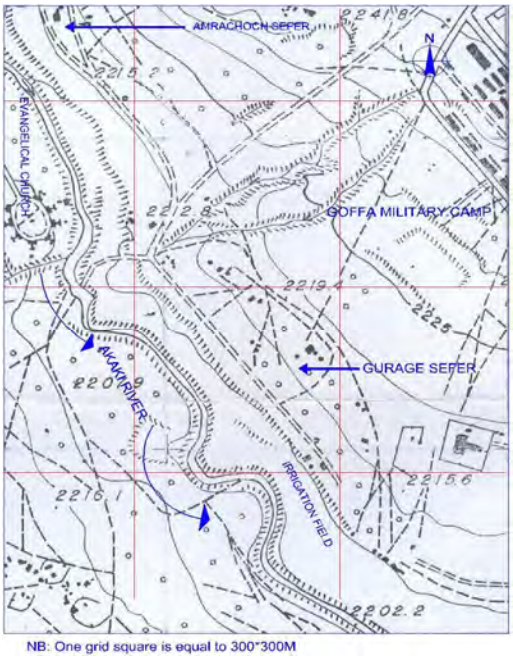


Fig.5.34 Amrachoc and Gurage sefer in 1986

Fig.5.36 Amrachoc and Gurage sefer in 2005

In 1991 when the socialist system was replaced by a pro-market state the former defense force structure was completely dismantled and substituted by new military personnel. Some civilian institutions like the giant organization Ethiopian Building Construction Authority which accommodated many laborers was closed down. As a result a large numbers of people were displaced from their formal working and habitable space. Ground force family members living at Goffa military camp were one of the first victims to carry the burden of displacement. The transitional government had forced them to leave their previous place and automatically they moved out to the near by Akaki riverbank. This dramatic situation has brought gradual physical transformation on the overall settlement pattern, which is mostly realized through every ten years aerial photos (Fig.5. 34, Fig.5.35 & Fig.5.36).

B) Infrastructure

Road network

Amrachoch and Gurage sefers have got different street patterns. In the case of Amrachoh sefer since it is very close to the formal settlement, the street pattern is very close to that of the formal settlement grid iron type street lay-out. Very narrow but moderate size muddy streets exit in large part of the settlement. In some parts partially gravel road exists without having any defined street pattern. The street width may vary from 3.5–9meters, which usually serves as an access road for pedestrian, and donkey. The only road which bisects the irrigation fields serves as an access for heavy trucks that transport different vegetables from the farming area. But due to lack of proper maintenance and as a result of not having responsible authorized body the road is partially changed into a garbage field or children play ground.

Fig.5.37 New road under Construction

On the other hand Gurage village lies on the open field, there is single passage that connects the two informal settlements and further goes to the kosta sefer informal settlement. Currently the proposed 25mts road on the structural plan that begin from the main gate of Goffa military camp is crossing Great Akaki River and join the ring road (Fig.5.37). This road has been under construction since the beginning of 2006 and it is supposed to be finished by the end of 2007.

Electricity and water

On both settlements provision of electricity to each and every individual house are available either as private or communal ownership. More than 95% of the inhabitants do have either private or communal electricity (Fig.5.39); however, the cost is very expensive, so dwellers in most houses use only for lighting, in very limited dwellings they use for injera stove. Besides, Gas, paraffin, and firewood are the major source of energy for cooking their daily meals.

Fig.5.38 Public water tap

Except some residential quarters more than 50% of houses do have either private or shared water tap (Fig.5.40). The inhabitants use the clean water only for drinking and cooking, but for washing clothes and household items they prefer to use channel water. In the neighborhood there is big channel, which diverts water from Akaki River to the surrounding irrigation fields. After crossing large acre of land finally it goes to the river line. The river serves as a swimming pool especially for youngsters that reside in the settlement.

In the settlement at a certain distance interval there are communal water taps serving for drinking and cooking purpose (Fig.3.38); while the river water is used for irrigation, bathing and washing some household items. In the settlement there are 153 households out of which the distribution of basic services such as electricity and water are shown on the following graphs.

Fig. 5.39 Electricity distributions

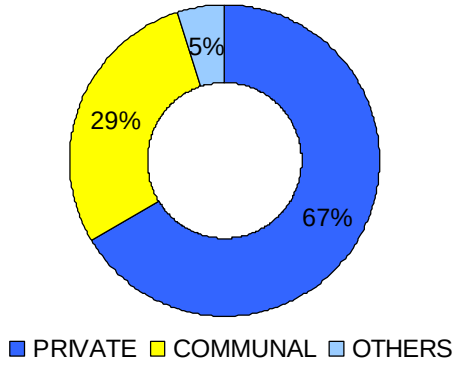
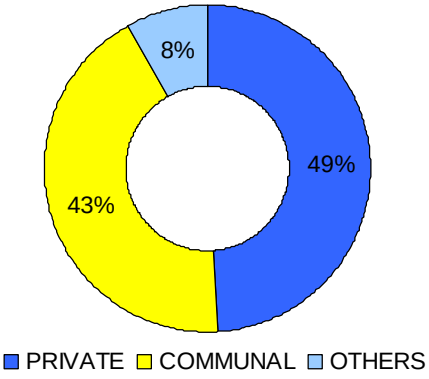


Fig.5. 40 Water distributions



C) Public health

The compact and sporadic housing layouts that exist in the two-segmented settlements and being highly densely populated area have produced different implication on the inhabitants' health condition. Improper functional spaces in every individual house plus the mixed use of each function like cooking activities in most part of dwelling units are widely performed in sitting room, whereas local bread and injera preparations also rendered in a very small room attached to the main house. Usually it is next to bed room area, and sometimes it might be located very close to the dry pit latrine, so that, the closeness of various rooms and lack of sanitation makes the surrounding area to be the breeding ground for flies and insects.

Despite the presence of dry pit latrines in the two settlements, the level of keeping their habitable space clean and awareness of the public to preserve their surrounding is at the very minimal stage. Moreover, the unique characteristics of Amrachoch sefer where the majority of inhabitants live together with the vegetable growers are engaged in various employment sectors have low economic capacity. Thus, due to malnutrition and their incapability to pay for medication it is reported to have affected their health conditions; epidemic disease, like cholera is most common among those who live below the poverty line.

In addition to this particularly children from the settlement and it's environ are always swimming and collecting some disposed garbage components that are brought by running water from the upper part of the river (Fig.5.41). Eventually, they are easily affected by skin and other transmitted diseases.

Fig.5.41 Children' swim in the river

D) Blocks, fence and density

Amrachoch and Gurage sefer have different block arrangements; however, every settlement has its own peculiar characteristics (Fig.5.42). Amrachoch display mostly urban type settlement where different housing units are aligned in linear form without following any defined geometrical pattern. The block layout looks well-defined and properly organized structure interconnected with a gridiron street pattern. There is no clear size consistency between blocks; mostly they range from a minimum of 0.5hectars up to the maximum of 0.73hectars. In the contrary Gurage sefer do not display any geometrical shape, but it is widely dispersed in almost rural type settlement.

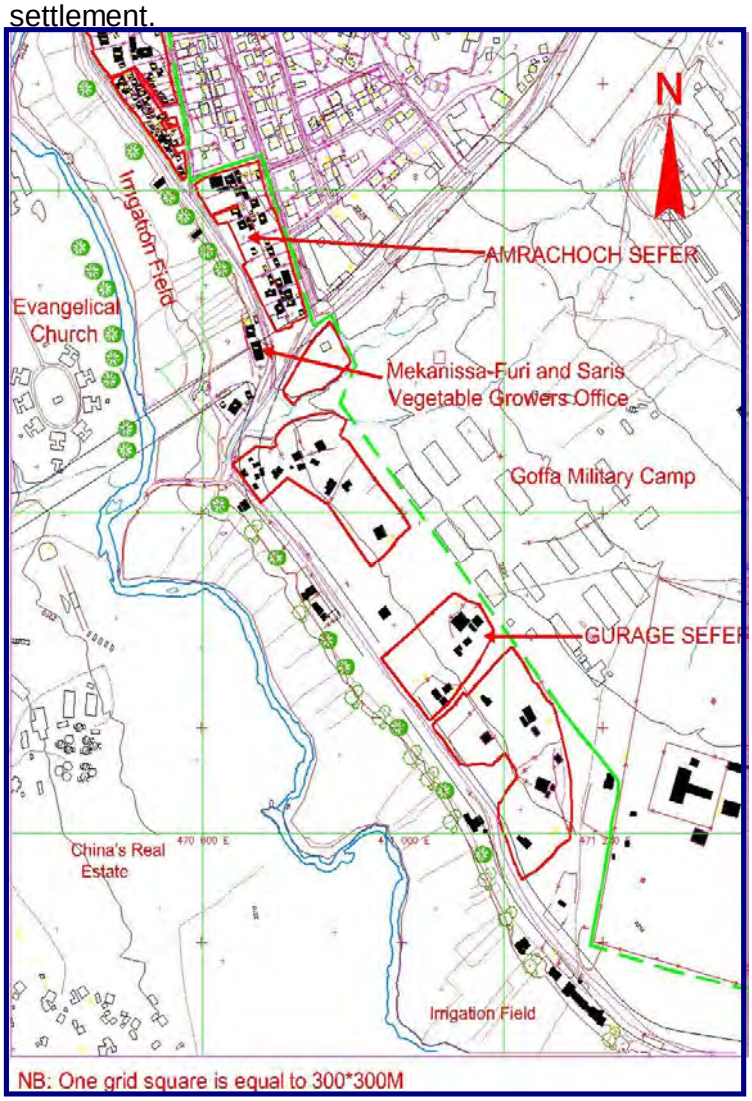


Fig.5.42 Amrachoch and Gurage sefer blocks arrangement

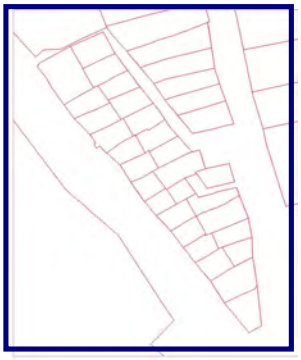


Fig.5.43 Plots sub-division

NB: Amrachoch sefer blocks and plots have grid iron arrangement while Gurage sefer both plots and blocks are irregular in shape

Different plots with various coverage areas ranging from the minimum of 52M^2 in Amrachoch sefer (Fig.5.43) to the maximum of 3,000M^2 in Gurage sefer. Most plots have no fence, but some inhabitants have constructed fences from old CIS and/or use shrubs to define their plots. There is a very wide road crossing the neighborhood from one extreme to another end functioning as the main access to the settlement. Moreover, this route, particularly during the dry season serves as a fast moving traffic circulation. In Amrachoch settlement houses were built in a very compacted manner, where as in Gurage sefer they are dispersed. Accordingly, housing density in each area would vary, In Amrachoch sefer is 653people/hectare and in Gurage sefer it is 34people/hectare.

E) House type

The informal housing developments in Amrachoch and Gurage sefer are constructed from wooden (eucalyptus) structure wall joined with chika mortar and no proper foundation. Windows and doors opening are made from corrugated iron sheet or wood. These are made by either the locals themselves with the help of some builders or entirely by the builders who are in both cases paid for their labor and expertise. Houses are aligned uniformly or may be scattered in various angles in whatever geographical locality. Usually Amrachoch sefer houses are small in size located on plain surface semi-urban environment (Fig,5.44) where they are attached to one another; while on marshy land Gurage sefer houses are big in size located in a rural type environment (Fig.5.45),

Housing conditions in both areas reflect the poor economic background of the inhabitants. Every housing unit is accessed and interconnected from a very wide unpaved street. In each single house of Amrachoch sefer there are many small size rooms ranging from 4-12M^2 accommodating basic services, but they do not have adequate natural light and proper ventilation. Most of which consist not more than two rooms (Fig.5.47). Whereas in Gurage sefer informal settlement is completely rural type, dispersed informal settlement; the houses are apparently like formal dwelling unit structured with semi-permanent building materials and comprising basic facilities with moderate room size. Inside of each premise beside the main house compulsory service such as traditional kitchen and animal husbandry are included. This settlement is completely segregated either by the access roads or culverts and being far from the route of the river the fear of drastic flood damage is very limited, however their irrigation field is mostly affected when there is heavy rain on the upper part of the river.

Fig.5.44 Amrachoch sefer typical house

Fig.5.45 Gurage sefer house arrangement

Cooking is mainly done outside their home but some have shelters or on the open air that are used as kitchens. The toilets and bathing places are also either within the compound (by digging dry pit latrine) or outside their home on open air or along the riverbank. Generally, in this case study area since most of the houses had been built before the pronouncement of Regulation No.1 and Regulation No.2, the fear of demolishing and eviction seems less. Thus most of the house, which do not violate the structural plan of the city, and dwellers that pay regular tax for the government may have the right of acquiring title deed. Therefore, once they are legalized and get recognition from the legal authority the whole settlement pattern and housing condition will be revitalized and have a possibility of getting better facilities. In the settlement out of 153 houses more than half are under poor housing conditions while the rest are categorized under fair and good status (Fig.5.46).

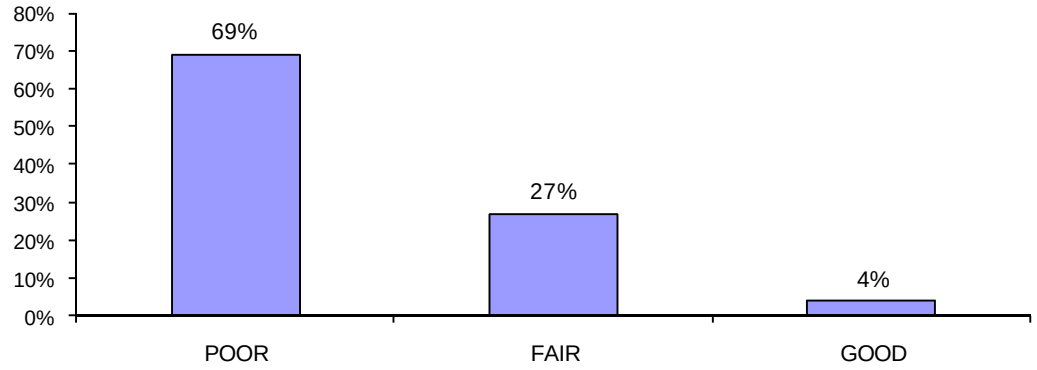


Fig. 5.46 Housing condition

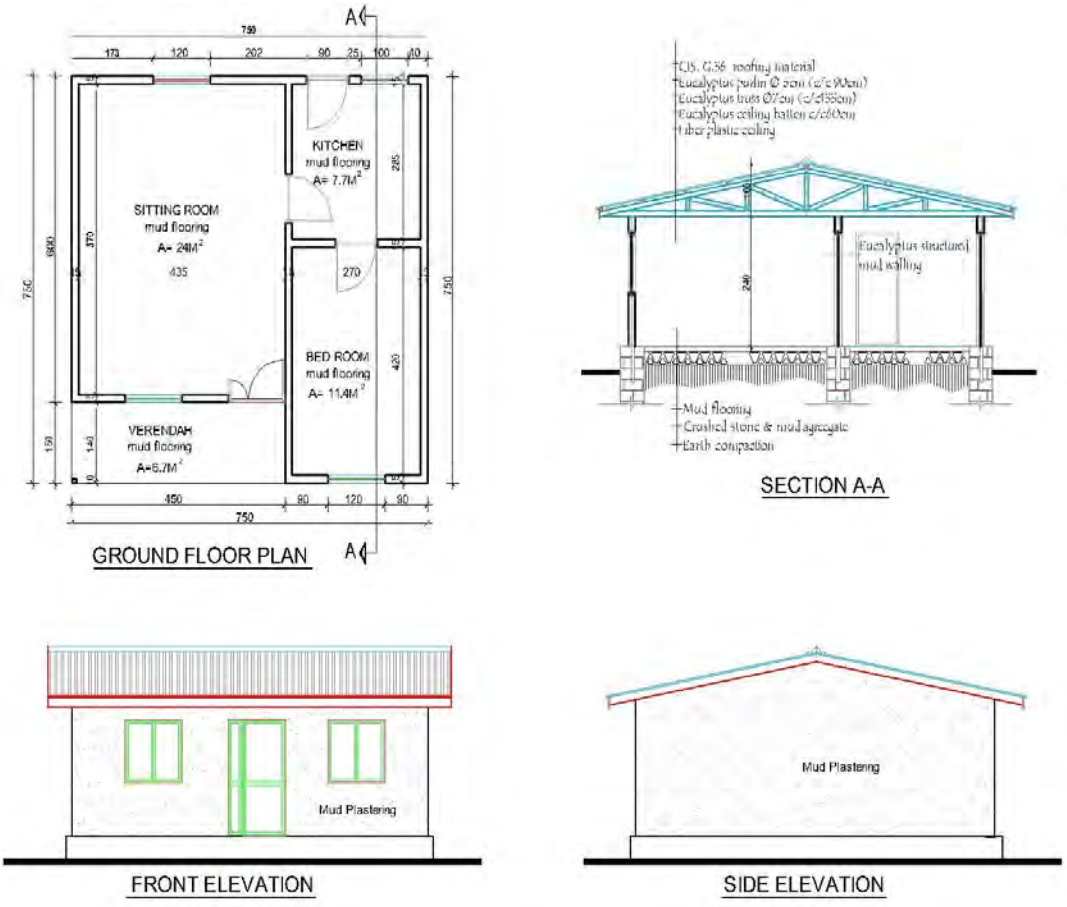


Fig.5.47 Typical house plan in Amrachoch and Gurage sefer

5.3.3 Socio-economic aspects

A) Socio-economic

Fig.5.48 Laborer on duty

The Greek person who established himself irrigation field on a very wide meadow and marshy land following Akaki river embankment nowadays has become a land of vegetables growing and habitable space. Initially when this person came to the area there were no significant number of settlers on the area, instead quite a large number of commuting daily laborers very often came to seek job opportunities in his farm for performing irrigation work, animal husbandry, and bee keeping (Fig.5.48). But, as time passed a new socialist system was introduced and operating as a social order, farmers were organized and started to settle on agricultural land at the present Amrachoc and Gurage sefer.

During this period the then Agricultural Office was fully assisting Mekannissa-Furi and Sarris farmers association to undertook modern urban agriculture with well equipped farming machineries, good seeds, and trained manpower. Immediately after the fall of the previous government structure a large number of displaced people both from the nearby Goffa camp ex-soldiers families plus the surrounding homeless people invaded the present Amrachoc sefer for constructing shelter without any legal bases. On the other hand, in Gurage sefer except the demographic growth, no new comers arrived in the area; almost all house heads are those from the previous period who are entirely engaged in Irrigation work and animal husbandry. The scarcity and in affordability of land in the central part of the city pulled large number of people to buy land from the earlier settlers, hence settlers who paid regularly land tax have got good opportunity to sell land with an approximate current price of 485Br/M^2.

In contrast to this in Amrachoch village except few numbers of agricultural producers majority of them are working in various activities: such as trade, daily labor, guard, tailor, low-waged employment in government, non-governmental or private organizations. In addition to these the riverbank serves as a good source of economic income, especially youngsters used the river as sand mining (Fig.5.49), dumping place of construction debris, and solid waste disposal site. Beside these activities small scale cottage industries such as metal workshop, cement products manufacturing firms, and Ethiopian Evangelical Church has been producing HCB (Hollow Concrete Blocks) in bulk, however, they do not pay any attention when they discharge their liquid and solid waste to the water course.

Fig.5.49 Sand mining

Fig.5.50 Human labors as means of transportation

The plain physical feature of the area, its short distance from the main route, and being accessible from any direction has allowed the settlement to be very promising for many modes of transportation. Heavy trucks especially during the dry seasons simply enter to the vegetables growing field from any directions load and transport vegetables to the communal market place called Ehile Verandah. In addition to this very often traders also carry vegetable products to the near by Kera market and/or use donkeys (Fig.5.50).

According to Ato Gettu yirgaws explanation particularly those who live in Mekanissa area agglomerates 33 households with a total population of 196 persons who are living and working in such settlement, whereas more than 200 households member of this association are living on another area. The religion compositions and educational back-ground of the settlers are different, more than 70% of the total population is followers of Orthodox religion, above 20% Muslims, and the rest worship other religions (Table 5.2). Unlike irrigation and weaving activities currently about 46% of the inhabitants are engaged in other employment sectors (Fig.5.51). In terms of education 45% of the total populations are illiterate (Fig.5.52). Regarding income 95% earn below Birr500 (Fig.5.53). The overall compositions of the settlement including other settlers who are engaged in different employment sectors are categorized under low economic class and this is testified through random survey, interview and questioners. The following table indicates the total riverbank settlers; number of population, educational background, religion, employment, and income group,

Table: 5.2 Population, Employment and Education

Population, Age category and Religion									
No. of population			Age				Religion (%)		
Male	Female	Total	0-14	15-20	21-54	>54	Christian	Muslim	others
424	493	917	227	164	432	94	71%	23%	6%

Fig.5.51 Employment status

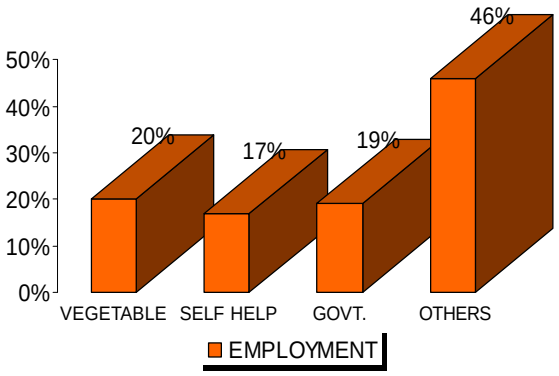


Fig.5.52 Educational status

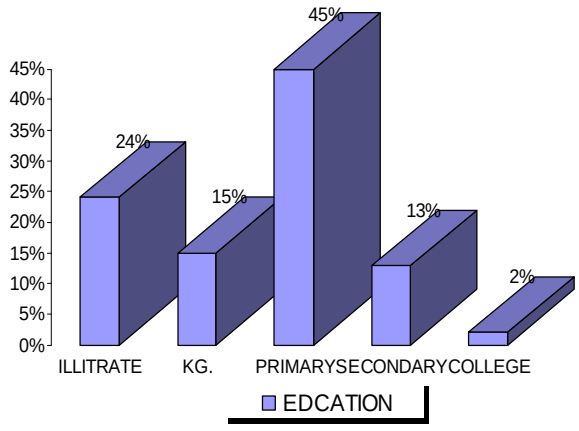
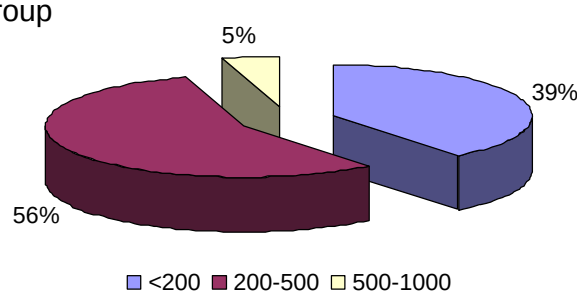


Fig.5.53 Income group



B) Social amenities

Fig.5.54 Vegetable Growers Association Office

There is no significant social amenity in the community, but in the middle of the two sefers there is one office building and warehouse serving as multi-functional activity for Mekanissa-Furi and Saris Vegetable Growers Association (Fig.5.54) Thus settlers due to lack of basic facilities to meet their needs are forced to go either to their nearby Kera community center or else to go very long distance to sub-city and city centers like Piazza and Merkato. Old but recently upgraded open air market of Kera neighborhood provides sufficient service for the kebele inhabitants and the neighborhoods.

There is no Kindergarten in the area, so families are forced to send their children to the informal educational system like Kes school. On the other hand, when they reach at the age of 6years they could find elementary school at a walking distance, where as to follow high school students are obliged to travel by public transport. Regarding college level education, particularly private institutions are found at a distance from the case study area. Beside the settlement except few privately owned health facilities there are no governmentally owned clinic or hospitals.

5.3.4 Environment characteristics

There are certain environmental factors that directly affect both settlements. Liquid waste of Industries like the nearby Mekanissa liquor factory (Fig.5.55) and upper stream Asko area tannery plant, small scale cottage industries such as Sofe-Omer concrete blocks manufacturing enterprise (Fig.5.56), and Evangelical church (religious institution) floor tiles and hollow concrete block production firms have been either directly or through the open ditches drainage has been directing all liquid waste towards Great Akaki River (Fig.5.57). Moreover, during the night time, through the guidance of gangsters, a large number of Lorries carrying construction debris and garbage damp illegally along the riverbank i.e. on irrigation field and on the river line.

During the rainy season when the surface water is much gullies are formed, internal access roads are blocked with mud and dirt, and sometimes it flows out of the river mouth. Thus, this very frequent flooding has put its own physical, social, economical, and health impacts on the general settlement. Particularly, in the lower catchments

area since it is located very close to the river line irrigation land is always hit by flood; it becomes marshy surface and part of riverbank is fully invaded by plastic wastes. These circumstances have damaged farmers' vegetables seasonally, beyond that fast movement of epidemic diseases like dysentery, typhoid, tuberculosis, etc occur within no time. As health statistics of Mekanissa Health center shows especially the death rate of children is enormous.

In terms of waste management the use of pit latrines in the settlement and neighboring septic tanks pose a risk of polluting canalled water. In most cases when it rains all wastes from pit latrines and septic tanks may go into the river where the settlers and surrounding inhabitants go to bath and wash. Open space besides serving as a children play ground very often used by the public as solid waste damping site. Illegal sand digging and collecting black stone from the river bed are practiced in the settlement. This has caused land slide on the riverbank where the mouth of the river is widened; quite a lot of growing vegetables and fertile soil are simply washed away at every production year. The Federal Environmental Protection Office has declared two proclamations regarding how to control environmental pollution, and assess the possible environment impacts; however, particularly along the riverbank area there is no positive move on the ground to tackle such problems.

Fig.5.55 Mekanissa liquor factory

Fig.5.56 Cement debris

Fig.5.57 Industries discharge waste

5.3.5 Political and legal aspects

A) Political aspect

In the previous socialist period this group of the society was the most advantaged group where they were well organized and accessed to get any facility from the government side. In response to this the military government had manipulated the association as a political instrument to fulfill the need of that time. In the contrary to this when the present government took power all privileges from the government side were partially stopped, and the area particularly Amrachoch sefer was spontaneously invaded by those who were displaced from the neighboring state of Eritrea, and ex-soldiers families from the nearby Goffa camp. Nowadays except the earlier informal settlement there is no as such new informal housing development, because of the kebele administration greater capacity to control informal settlements.

Though the area had been neglected and do not get any consideration by governmental organizations, the political party cadres and appointed Kebele administrators together with City administration have provided partial recognition to the settler. Among which issuing house number particularly to Amrachoch sefer and identity card to the whole settlements have facilitated some conditions in order to get

basic utilities and use right on their plot. What ever illegal construction may be performed by the settler very often they prefer to keep silent.

B) Legal aspects

During Imperial period there was no as such significant settlement it was only exist few dispersed houses existed on a very wide agricultural farm land. The land was owned by landlords. Following this era when socialist system emerged private ownership of land has totally transferred to government ownership, so the first settlers who had been working and living in the area got good opportunity from the government side to obtain ample space for irrigation and habitable space without paying huge sum as lease payment for landlords. The City administration had given permission only for urban agriculture use not for habitable space. Thus private ownership right on land was very restrictive as a result the settlement display rural village characteristic in the hub of urbanized area.

Currently, the neighborhood is under transformation the Addis Ababa Road Authority has carried out 25Mts. width road project stretched from Goffa sefer to Mekanissa ring road by crossing the two sefers. This scenario bears both positive and negative impacts on the overall settlement pattern. Some people were displaced to Lebu site without obtaining any compensation fee to the lost properties, but they have got a chance of 150square meter land having a title deed from the City administration.

C5-Public worship D1- Horticulture
2R3- Residential in expansion
1R4- Infill residential

Fig.5.58 Addis Ababa Master Plan in 1990

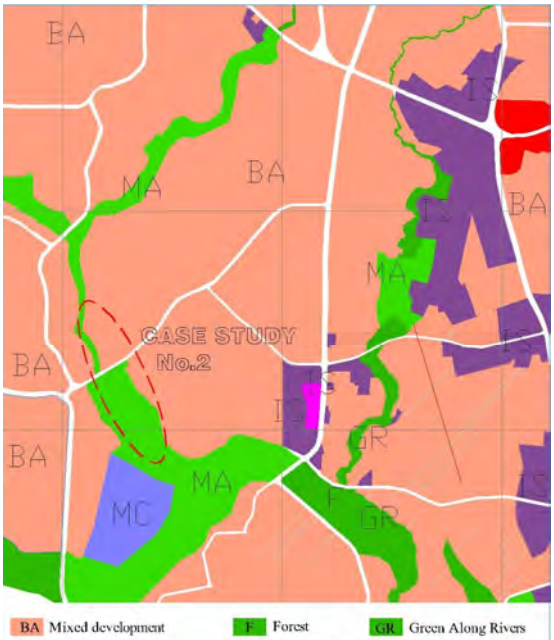


Fig.5.59 Addis Ababa Structural plan in 2002

In the 1986 master plan both Amrachoch sefer and Gurage sefer the habitable area as well as irrigation field were proposed for horticulture activity (Fig.5.58). Whereas in the recent structural plan the upper area i.e. Amrachoch sefer, the settlement is excluded from the horticulture, on the other hand Gurage sefer both the settlement and vegetable growing field were proposed under one land use category, which is for urban agriculture (Fig.5.59).

Accordingly, from few years onward through the application of the two consecutive regulations i.e. regulation No.1 and No.2, and ratified structural plan some legal recognition have been shown from the government side to those who settled informally and does not violate the proposed structural plan. Regardless of long bureaucratic procedures this phenomenon is a positive move to enhance the livelihood of the most neglected society like this type of settlement by providing legal recognition from the government side. However, it is observed that no one in the settlement has got title deed still they are waiting the application of two regulations.

5.4 CASE STUDY AREA No. 3 Cheri informal settlement

5.4.1 Description of location

The study area is located on the southern part of Addis Ababa along the lower Akaki River bank at Akaki-Kality sub-city, kebele 10/11/Seriti just behind Kality treatment plant on totally rural environment (Fig.5.60). This is about 12.5kms away from the central part of the city and 6.5kms from Akaki Beseka commercial center respectively. It lies on an approximate area of 54hectars of land. On the other side of the river from Akaki riverbank up to the foot of Hanna Mariam church newly emerging informal settlement sprawls on different directions. Whereas on the northern direction adjacent to the irrigation field big garages and industrial buildings appeared, while on the south a few distance apart rural type settlements exist.

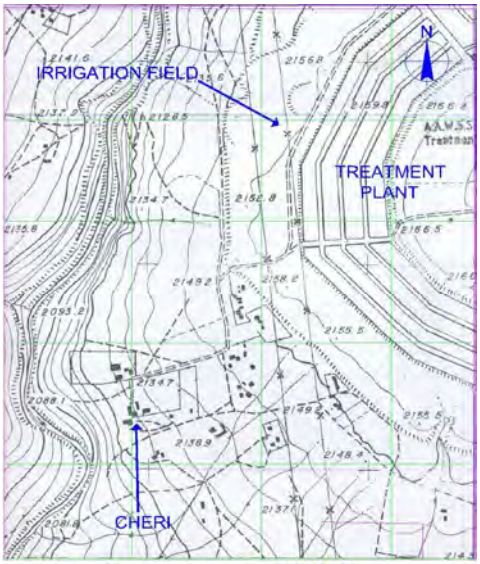
Fig.5.60 Location map of Cheri settlement

Formerly this area was under Seriti peasant association, but four years back (in 2002) when the Addis Ababa city revised its structural plan all kebeles were restructured in a new form and then two or more kebeles were integrated in to one kebele, as a result of this fact this settlement has been incorporated within the urban kebele administration.

5.4.2 Physical characteristics of Cheri informal settlement

A) Physical characteristic

According to head of the Kality treatment plant Ato Assefa Alemayehu, before the establishment of the treatment plant there was no significant settlement in the area. Earlier the farmers used the area as farm and grazing land; in addition to these activities on the other side of the riverbank the land serve as quarry site. Though, when the treatment plant was established in 1982 all previous facts had partially changed. The treatment plant converted the area into marshy land, as a result a group of farmers by sharing experience from the upper riverbank vegetable growers started to cultivate and produce different



NB: One grid square is equal to 300*300M

Fig.5.61 Cheri settlement in 1986

vegetables through irrigation system. Moreover, dairy farm and some other related activities are underway. The three consecutive maps have indicated how the settlement has changed through time (Fig. 5.62, 5.63, & 5.64).

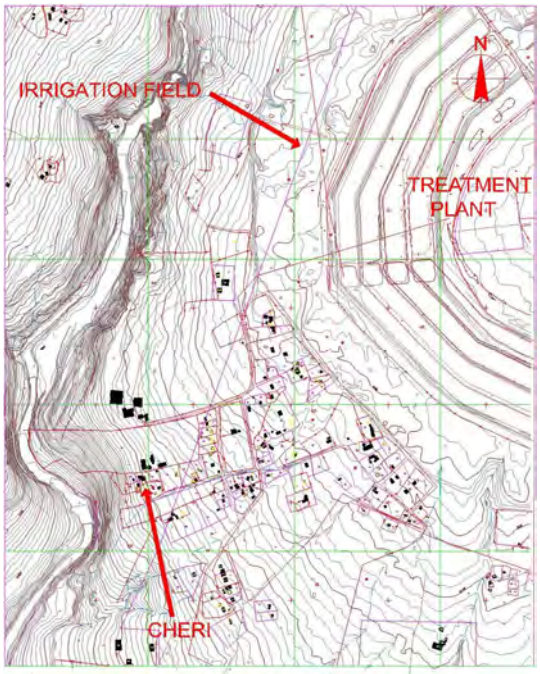


Fig.5.62 Cheri settlement in 1995

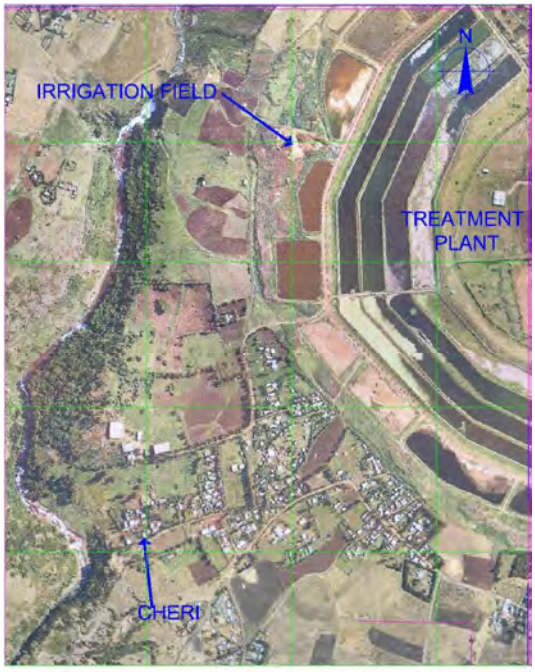


Fig.5.63 Cheri settlement in 2005

B) Infrastructure

Road network

Fig.5.64 Road lead to the settlement

The road network of Cheri riverbank informal settlement (Fig.5.64) displays difference from that of the above-mentioned settlements. Even though it is found on the river bank the main point why this settlement emerged was the foundation of the treatment plant, in addition to this an appealing situation of having fertile soil. Moreover the recently opened temporary road that connects different internal routes and rotate around the circumference of plant premise had attracted an enormous number of especially homeless people to the area. Regarding internal access road there is no clearly identified street system, there are simply narrow and irregular foot paths which provide access to different houses

Electricity and water supply

The basic infrastructure provision in the settlement may vary in magnitude according to the period of each and every settlement formation and proximity to city center. In this settlement 56% of residential houses they do have their own private or communal electric line (Fig.5.66). On the contrary, very few settlers who are financially poor and new comers' particularly daily laborers and those who need very

cheap rentable houses do not have electricity. Due to electricity expensiveness inhabitants are forced to use only for lighting, but for cooking purpose they use gas, paraffin and firewood.

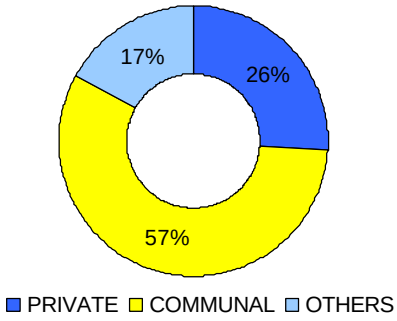
Regarding potable water since the area is located in the former Seriti farmer association, and being far from city development there is no piped water, even they could not get communal water tap. Women are responsible to fetch water from distance area carrying back breaking water container. The implication to their health is enormous. Therefore, in this case study area things are quite in a different scenario, residents do not have any opportunity to obtain clean water so they are forced to drink spring water from the nearby spring (Fig.5.65) or they may have to travel long distance to Kality residential area.

Fig.5.65 Ladies fetch Spring water

In the settlement there are 296 households out of which the distribution of basic service particularly electricity is shown on the following graph.

Fig.5.66 Electricity distribution

NB: There is no water supply



C) Public health

The semi-urbanized rural type Cheri settlement shows different types of housing arrangement, which have been harmful on the inhabitant's health conditions. Most of the houses since they were very tightly erected on a small parcel of land the level of sanitation, and drainage system of the area is very poor. In the contrary big in size residential blocks were also established adjacent to animal husbandry houses on wider premises. These dual activities, lack of private pit latrine, and water tap for every individual dwelling unit, plus its location adjacent to the treatment plant makes the area to be the breeding ground for different type of disease causing parasites

Some part of the settlement lies on the marshy land. The rate of reproduction of mosquitoes is higher. The survey conducted by the health bureau shows that malaria is the commonest disease that affects the inhabitants. Thus settlers could easily be affected by malaria and water borne diseases. Particularly, in the rainy season when it rains all waste from the pit latrines may go in to the river where people go to bath and wash this could also result in skin disease.

Fig.5.67 Carrots and vegetables Washed by river water

Beyond that edible vegetables before arrival to the market place are being washed by polluted river water which increases the magnitude of contagious diseases transmission reached at the climax level. Particularly among women who are often involved in washing and selling vegetables (Fig.5.67).

D) Blocks, fence and density

Cheri informal settlement has been composed of more agrarian type settlement; where different blocks are randomly arranged one after the other without any proper demarcation (Fig.5.8). Some blocks are too small in size and others are too large and very extensively elongated by covering a very broad farmland. Though, it is located adjacent to the newly developing urban form of Kality settlement the whole neighborhood seems agrarian village, and do not have any logical blocking system. The size of the blocks range from the minimum of 0.17 hectare up to the maximum of 5.4hectars, each block comprises from 4 to 52housing units.

Different irregular plots are either attached together or detached on a wider agricultural land, and their size also varies from 297M^2 to 4142M^2 (Fig.5.69). Most of the houses were built randomly regardless of any geometrical configuration. No mason's and craftsman's knowledge was practiced in the area. As we observe the settlement we could see an enormous number of small and big muddy houses built on a single plot at different times. In spite of illegal possession of large parcel of land for habitation, proper fencing is not visible in the area. Besides, on some part of the settlement at a certain distance interval eucalyptus wooden posts are erected to show the boundary line between plots, while on others corrugated iron sheet and barbed wires are used for fencing purpose.

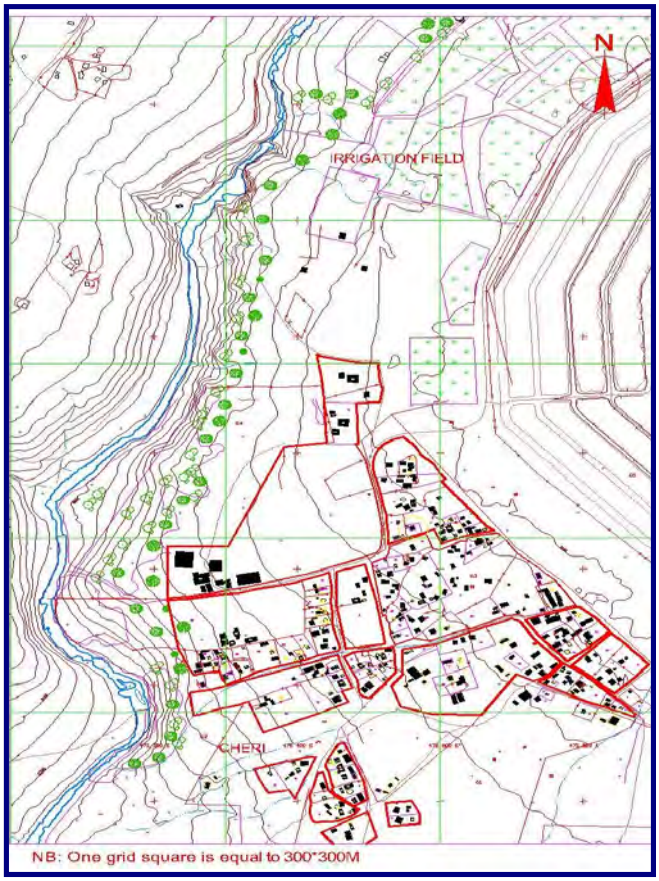


Fig.5.68 Cheri settlement blocks arrangement

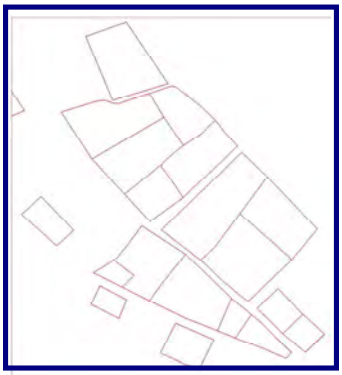


Fig.5.69 Plots sub-division

NB: Both blocks and plots have the same irregular shape

There is no clear road network in the area; particularly during the dry season any one could arrive to the area with any mode of transportation, however when we start to enter to the neighborhood we take a narrow 2.5Meters wide meandering footpath that connects the whole settlement. Generally, by looking over the central part of the case study area housing layout and following the growth trend of the settlement we can find the housing density which is 185people/hectare.

E) House type

Housing development behind the treatment plant was performed without any planning concept; they were simply erected on the farmland one after the other. The construction technique had been taking from other area informal settlement, at the first stage when settler started to build his/her home the major construction materials which they applied were eucalyptus tree, chika mortar, and corrugated iron sheet. Sometime for kitchen and toilet construction polyethylene sheets, sacks, plastic tent are also used in the area. When we look foundation and flooring of main house there is no as such proper foundation, simply the eucalyptus pillars and walling splints are simply stuck to the ground (Fig.5.70).

Almost all dwelling houses were built with temporary building materials, which are covered with corrugated iron sheet structure with eucalyptus frames, and their typical floor height is nearly 2.5Mt. Even though the recently built row house room height is short, light and ventilation is adequate. Cooking is mainly done outside the main house; either inside shelters or on the open air. The toilets and bathing places are either within their compound by digging dry pit latrine or outside their home along the riverbank. In the settlement out of 296 houses nearly three quarter are under poor conditions while the rest are categorized under fair and good status (Fig.5.71).

Fig.5.70 Cheri house layout

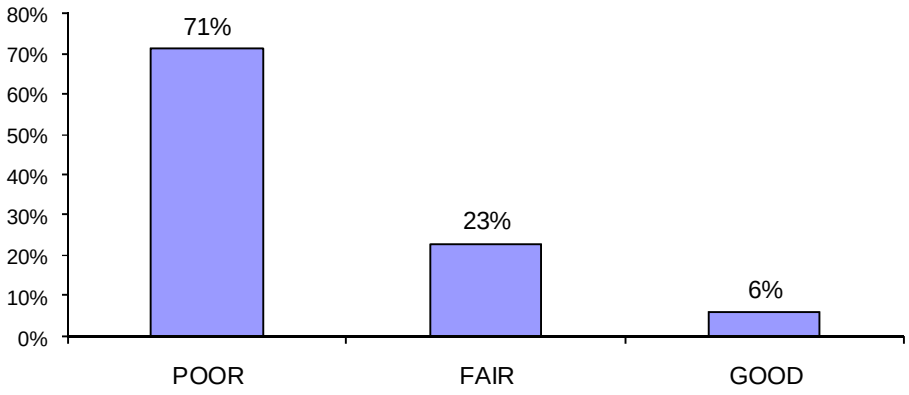


Fig 5.71 Housing condition

In the earlier period since the area was functioning as agricultural land farmers did not bother about displacement, but nowadays due to fear of demolishing and eviction new settlers who arrived to the area have been constructing small houses with a minimum floor area of nearly 32M^2, and some times they may extended it to a very large habitable space (Fig.5.72).

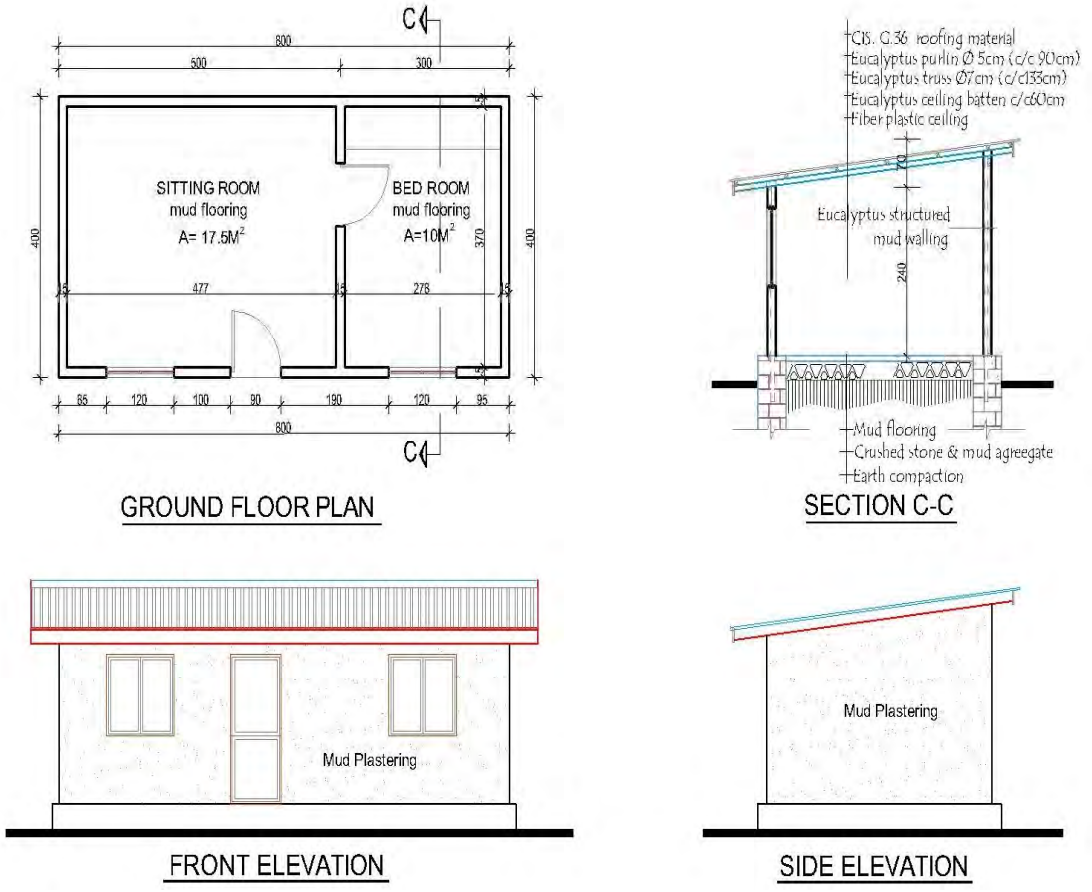


Fig.5.72 Typical house plan of Cheri informal settlement

5.4.3 Socio-economic aspects

A) Socio-economic

Cheri riverbank informal settlement is a rural type settlement. It is entirely segregated from any kind of urban development. After the establishment of Kality Treatment Plant, the rural type informal settlement behind the treatment plant was established for the first time by the nearby farmers to grow vegetables on the marshy land (Fig.5.73). At the beginning only the Oromo ethnic group was performing irrigation, farming, and animal husbandry. Later, very few people from Gurage ethnicity also attracted to the area to find ample space for irrigation and habitation purpose. For years the vegetable producers were not organized and do not have legal recognition from the government side, so they did not get neither technical nor financial support from any legal body. Besides, since they are encroaching on the extension part of the treatment plant they have faced a lot of problems to overcome their routine activity in a proper manner and even they do not have any prospect to ameliorate the existing haphazard situations.

Fig.5.73 Vegetable growers

Fig.5.74 Animals drink polluted water

Fig.5.75 Dairy farm

Most of the inhabitants especially women are not totally dependent on vegetable growing; in addition to this job they are doing animal husbandry (Fig.5.74) and dairy farms (Fig.5.75). Moreover, adjacent to the river industrial firms and big quarry sites have accommodated an enormous number of daily laborers, guards, etc… from the settlement. At present the number of informal settlers has dramatically grown; due to mainly those who came from the urban area in search of large parcel of land with less amount of money for performing not only for irrigation, but also for housing. Unlike, previous period land cost has escalated beyond what we expect especially in a rural area. Currently it has risen up to 120Br/M^2. Even though the settlement lies on plain surface due to its locality being far from the well-developed central part of the city, there is no vehicular access to the area. Therefore, to transport heavy objects like vegetable products and some other foodstuffs usually they use cart as the basic means of transportation.

In the case of Cheri informal settlement things are different, vegetable growers are not organized, so to get an appropriate number of residents was a huge task. Through random survey, arranging questioners, and asking sub-city agricultural office expert Ato Alemayehu Terfa I obtained sufficient information about the socio-economic composition of the settlement, so the following table (Table 5.3) indicates number of population, educational background, and religion.

Table: 5.3 Population, employment and education

Population, Age category and Religion									
No. of population			Age				Religion (%)		
Male	Female	Total	0-14	15-20	21-54	>54	Christian	Muslim	others
851	920	1771	463	262	859	187	57%	39%	4%

Regarding employment status, it is unlike other settlements about 42% of the Settlers are governmental employees, and only 17% are engaged in vegetable growing sector (Fig.5.76). In terms of education since most of them are employed comparatively they have got better educational back-ground, and the number of illiterate is 17% (Fig.5.77). When we look their financial capacity from the total inhabitants 43% earn less than Birr200 per month (Fig.5.78).

Fig.5.76 Employment status

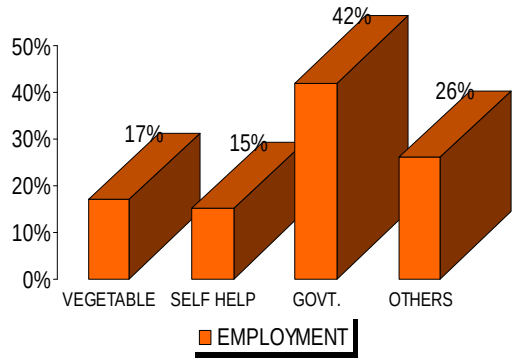


Fig.5.77 Educational status

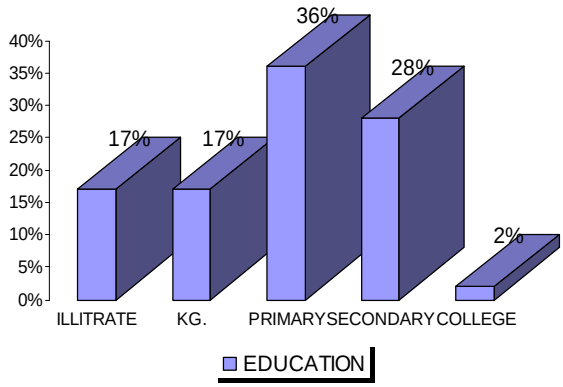
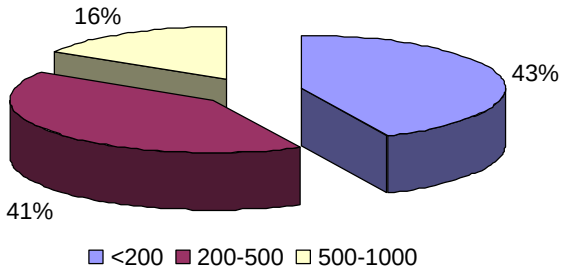


Fig.5.78 Income group



B) Social amenities

This locality being out of the city center and being under the former Seriti peasant association, social amenities are not found at a short distance. It is entirely segregated from any kind of urban development. Pupils usually travel hundreds of meters to arrive at kindergarten, and elementary school. There is one high school in Akaki-Kality sub-city called Derartu comprehensive secondary that is too far from the settlement.

There are no proper shops or markets and people go to Kality market which is about fifteen minutes walking from the settlement or they may go at a distance to the sub-city center Akaki market. Health facilities, Police station, recreational facilities, and other basic services are found in the city center. Therefore, to get any facility settlers may have to go to the sub-city market place or to the city center.

5.4.4 Environmental characteristics

After the establishment of Kality liquid waste treatment plant the agrarian way of life style was partially ignored and new urban like settlement pattern has emerged spontaneously consisting of different social and economic groups of the society. In the earlier period since there was a defined settlement in the area, insignificant number of quarry extraction and wood cutting works were performed.

At the time the plant was fully operational the liquid waste which is brought from various parts of the metropolis to the damping site after passing different treatment processes is released to the river line. Subsequently, part of the surrounding farmland where the water goes through was converted into fertile irrigation field; however, the fresh liquid waste that arrives to this particular site bears air pollution on the general environment. The area does not have clean water, so the inhabitants are forced to use river water for cleaning, washing, and bathing. In addition to these very often they use spring water for drinking purpose; as a result they are always exposed to different types of contagious and epidemic disease, especially children are highly affected and their death rate are very high.

The recently revised structural plan was applied at city level, but we observe some industrial firms stand against the governing land-use map. Their compounds extend up to the edge of the river, and even they built big in size manufacturing blocks without keeping set back regulations (Fig.5.79). In addition to this even though there is ratified rules and regulations regarding environmental pollution control and protection still we observe the river is extremely polluted with different solid and liquid wastes, and affected by land slide due to continuous quarry activity.

Extractions of building materials like masonry blocks from big quarry sites, cutting of eucalyptus trees, are very widely practiced in and around the settlement (Fig. 5.80). Sometimes when the surface is exploited the quarry depth might go below the riverbed. These circumstances plus very frequent flooding has aggravated the level of soil erosion, land degradation, and landslides. The liquid waste that comes from the upper streams industrial estate like Awash tannery, the nearby leather and leather product technology institute, liquor factories, and some other firms excessively directed wastes to the river line. On the lower part of the settlement animal byproducts are widely ignited for producing cola which is being used as a building material (Fig.5.81). Generally, the area due to its locality being on the lower course and very close to the treatment plant it is highly affected by different environmentally hazardous components.

Fig.5.79 Leather factory

Fig.5.80 Quarry site

Fig.5.81 Cola manufacturing

5.4.5 Political and legal aspects

A) Political aspect

Although the settlement is located within urban boundary almost for years it had been administrated under Serit peasant association till it was incorporated as part of the kebele unit. The locality being far from the city center, inadequate provision of basic services, and lack of infrastructure in the area has limited the interference of the City administrative on workers in the area. On the other hand, the application of

rural based economic policy of the present government to rural area like this settlement has permitted political cadres to use as a political instrument to fulfill their political goal. Therefore, these circumstances plus the short and long term wish of the settlers to get legal entity from the government side verses fearing seldom bulldozing activity of the law enforcement body have forced them always to participate in the political rally and give vote to the political cadres

B) Legal aspects

As it was mentioned earlier before three or four years ago the settlement was totally administered by peasant association, this situation makes the area to look more like agrarian type society rather than being urbanized. But, after it is incorporated within the urban administration to a certain extent things have started to change, the inhabitants obtained identity card from Kebele office, their role in urban social, economic, administrative, political activities started to be recognized and some bureaucratic activities regarding their settlement is also considered according to the two regulatory frameworks and the recently revised structural plan.

The previous master plan had left the area for treatment plant extension and wood land (Fig.5.82). Whereas, according to the present structural plan the area is planned partly for forestry, partly for agricultural functions and very few part of it i.e. on the southern part is left under mixed-use function (Fig.5.83). This shows that the major portion of the settlement is left within forestry and agriculture, while the present irrigation activity rest on forestry. Therefore, the settlement remained under fear of evection or would expect some other solution from the government side.

C3- Treatment plant P2- Informal green
I2- Industry

Fig.5.82 Addis Ababa Master Plan in 1990

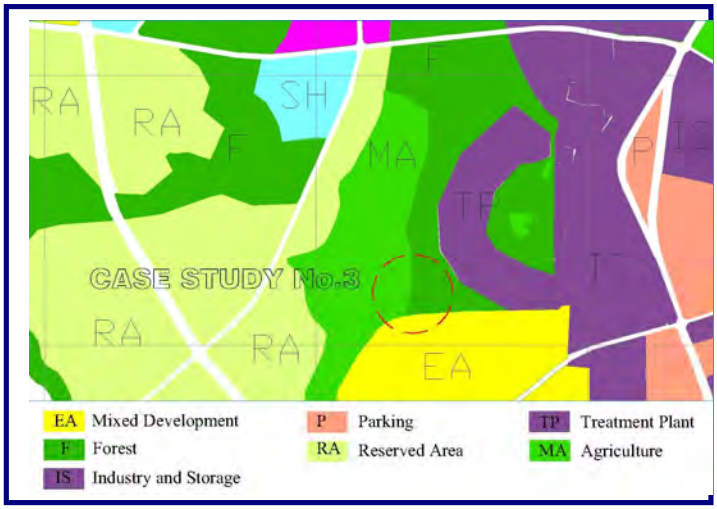


Fig.5.83 Addis Ababa Structural plan in 2002

CHAPTER- VI

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

CHAPTER-VI: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter comprises four parts. The first part dealt with the main findings of the research. The second part presents discussion of the result in relation to the theoretical back ground and settlers' responses. The third part consists of conclusions drawn from the research and the fourth part is recommendations.

6.1 MAIN FINDINGS

The literature part, physical observation of Great Akaki Riverbank from top to bottom, gathering information from the inhabitants, and made in depth assessment on the specific case study areas has revealed why people settled informally in such peculiar area, socio-economic composition of the settlers, characteristics of riverbank informal settlements, physical and environmental consequences. The findings could be grouped under the following four themes, similar to the focuses identified earlier.

- Socio-economic characteristics;
- Physical characteristics;
- Political and legal aspects of the settlement, and
- Consequence of informal settlement on the environmental.

6.1.1 Socio-economic characteristics

People have been living in a different environment to meet their daily needs, and sustain their life. In urban area beside formal settlement some inhabitants are informally living and working on open space, green area, farmland, street side, expansion area and riverbank. Among these informal settlers Great Akaki Riverbank settlements have their own social and economic composition and unique characteristics. Thus the findings in regard to socio-economic aspects are presented under social and economic classifications.

A) Social

- During Italian occupation period members of the society particularly from Gurage ethnicity with their chiefs mainly in search of job opportunities and habitable space started to settle in Kolfe (Sore Amba) and Mekanissa (Amrachoch and Gurage sefer) to perform irrigation activity on Great Akaki Riverbank.
- During socialist period this social group was organized and established Kolfe Vegetable Growers Association on the upper Akaki riverbank and Mekanissa Vegetable Growers Association on the middle Akaki riverbank. The main reason why they were organized by the government was to alleviate the food shortage and tackle the recurrent draught that occurred in 1983. This was the precious moment for vegetable growers to obtain any government support including full use right over irrigation field and the natural river water, technical support from Agriculture office, and provision of market place at Mesalemia area. After the collapse of socialist system Vegetable Growers did not get any government support, instead they are regarded as environment pollutant and their settlements considered as hiding place for illegal people.

- Following change of government in 1991 large number of people displaced from Eritrea, ex-soldiers from different military garrison, and groups of people from South Nation and Nationalities like the seven house Gurage (vegetable growers), Gammo (weavers), and Selte (hawkers) occupy riverbank area in search of cheap house rent, ample living and working space.
- Non governmental organizations like Catholic Church and Muslim organizations play pivotal role to enhance the livelihood of the community by allocating budget for infrastructure such as: installation of communal water tap, and electricity. In addition to these they provide financial subsidy and facilitate their means of subsistence particularly to old, disable and children who lost their families due to pandemic AIDS. In the mean time, the transitional city administration has also paid especial attention to the jobless poor youngsters to be incorporated and accessed to different small scale enterprises.
- The recent trend of informal settlement along the river is different from the past before they commence to settle in such peculiar area first they built either Church (Orthodox) or Mosque with temporary building materials and around such institutions very dense unplanned settlement flourished dramatically. Moreover, they serve as a training and reproduction ground for the religious extremist; as a result especially youngsters regardless of economic class are attracted to the area. It appears that settlers use religious institutions as shield.
- In the entire riverbank informal settlements there is no social amenity hence to find some services settlers forced to go to the neighboring formal settlement or else they have to go long distance.

B) Economic

- Starting from the commencement of horticulture activity along Akaki River up to the recent years the role of vegetable growers is quite immense; they have been developing more irrigation fields throughout the river, rear domestic animals, and boost the city economy. However, when new comers such as; daily laborers, tailors, hawkers, traders, ex-soldiers, low-waged government, non-governmental, and private organizations employees arrived to the settlement the settlers economic composition become versatile.
- The settlement have been serving as a good ground for performing every illegal activities such as; excessively cutting off eucalyptus trees for house construction, charcoal production, sand mining, cola manufacturing, extraction of masonry blocks from big quarry site. Besides, child labor is highly abused, edible and inedible foodstuffs sieved and packed, and in general beyond irrigation and some activities it is a hiding place for easy money seekers, robbers and military armament traffickers.
- Due to fear of eviction, (as a result of lack of land holding right) and escalation of cost of consumable commodities, vegetable growers sell their irrigable fields and forestland to new comers. Although it is illegal, due to the attractive price, new arrivals who could not have access to land in the formal system buy land here. Currently land price in different settlements has escalated based on its accessibility and future development potential of the area. Thus land price in Sore Amba is 70Br/M^2, Cheri is 120Br/M^2, and Amrachoch and Gurage sefer is 485Br/M^2.

6.1.2 Physical characteristics of riverbank informal settlement

- The inaccessibility of land to the poor from the government side, termination of self help cooperative house program, and lack of technical and material support by the government, unaffordable house rent in the city has exasperated the housing shortage in the city. This dramatic situation has pushed large number of the society especially low income group to settle on government uncontrolled riverbank areas.
- Riverbank informal settlements flourished on marshy land, steep slope terrain, and Inaccessible riverside areas. During the Imperial era in almost all areas there were no as such significant settlement, but when the socialist system emerged as a social system only the previous vegetable growers and newcomers with the same ethnic background established a stronger settlement. Today however owing to rapid urbanization and economic and physical accessibility of the settlement the area is settled by other groups of the society as well and the land use informally converted into residential area.
- Unlike other informal settlements the typical manifestation of Riverbank informal settlements are organic in shape, houses are interconnected by spider web foot path and donkey passage, irregular blocks and plots arrangement. Access roads are totally mud surface, in area like Amrachoch and Gurage sefer lorries could enter only during the dry season.
- All houses are mud house constructed from eucalyptus tree, mud plastering, and covered with corrugated iron sheet shed (Zanigaba) roof. But the recent housing development is a bit different from that of the former construction technique. Initially settlers erect eucalyptus posts, vertical and horizontal elements on parcel of irrigation land and covered with plastic, then within a week time if law enforcement bodies do not come to the area they plaster with chika mortar and cover with corrugated iron sheet.
- Most houses consists two habitable rooms attached with semi covered kitchen and open dry pit latrine. They are attached one after the other, between plots there is no proper demarcation, some times inhabitants may fence it with old corrugated iron sheet, shrubs or they may leave it open. Depending on its locality the house floor area and density may vary in Cheri floor area=32M^2 and density=185people/hectar, in Sore Amba floor area=42M^2 and density= 645people/hectar, in Amrachoch and Gurage sefer floor area=56M^2 and density=653-47people/hectar.
- Insufficient piped water provisions, poor drainage system, bad housing, malnutrition plus shortage of finance to pay for medication and no government intervention in Riverbank informal settlements bears a total chaos on the settlers health conditions. Besides, the settlements being located on marshy land and waterfront mosquitoes and waterborne diseases could easily reproduce. As a result epidemic diseases like cholera, tuberculosis, typhoid, skin diseases, malaria, etc… widely spread in the settlement.

6.1.3 Political and legal aspects of the settlement

The political and legal findings in these settlements are also elaborated accordingly.

A) Political aspects

- Despite informal settlements have transferred from total demolishing to recognition at the global level, in our city the city administration still neglects the extremely poor riverbank settlers who can not afford even to pay for minimum floor area premium payment of low cost government condominium houses.
- The political appointee, especially Kebele officials regardless of legal matters, some times they provide identity card and supporting letters to the informal settlers and the settlers feel as if they are recognized by the government. In return during election time cadres expect more vote would come from this type of settlements, so very often they are not willing to respond to the demolishing and eviction program of the city administration, as a result the program is always halted by political groups.

B) Legal aspects

- The application of the two regulations i.e. Regulation No.1 and Regulation No.2 even though there are some drawbacks to a certain extent they have brought some relief, especially to the earlier vegetable growers who settled in the area for decades. The regulations entertain the informal settlers only if the person did not settle against the recently revised Addis Ababa Structural Plan and fulfill the requirements of the two regulations, and pay regular land tax. Accordingly, very few vegetable growers who settled on the upper area of Sore Amba have got title deed through Regulation No.1.
- The Federal Democratic Republic of Ethiopia on 3rd of December 2002 has ratified two proclamations to control environment pollutants, and assess the level of impacts caused by different individuals and firms. Following this two years ago the Addis Ababa City Administration has provided title deed of the city green frame map to the Addis Ababa Environmental Protection Authority. However, due to financial shortage, inadequate trained manpower, lack of coordination with governmental and non-governmental offices, and other constraints the Authority was not able to perform any function on riverbank areas.
- The recently ratified Addis Ababa Structural Plan shows that except Amrachoch sefer and the eastern part of Sore Amba informal settlement most riverbank informal settlements including western part of Sore Amba beyond Great Akaki river are located in the forest zone; large part of Gurage sefer exist on horticulture area, and the entire settlement of Cheri informal settlement is located on forest and agriculture land. Regarding laws and regulations the majority of informal settlers would remain under fear of eviction or total displacement.

6.1.4 Consequence of informal settlement on the environment

- Excessively cutting off forest, clearing off irrigation fields, and extracting masonry blocks from quarry sites for economic use result to endless deforestation, increase soil erosion, landslide, frequent flooding, and desertification.

- An organic settlement pattern, very narrow foot and donkey passage hindered the flow of rain storm. Especially during the rainy season when there is heavy rain very frequently flooding has occurred and harshly affects the settlements by demolishing residential houses, vegetables, animals and human being are drawn to the lower part. In addition to this when the volume of water flow beyond the river mouth all salvaged plastic wastes invaded part of irrigation fields. These circumstances have damaged farmers' vegetables, houses, and take away the most fertile top soil.
- In the settlement since there is no infrastructure facilities motorized transport could not able to enter and easily collect both liquid and solid wastes. Therefore, settlers are obliged to drain and damp all liquid and solid waste matters towards the river line. Moreover, settlers excrete solid matter, urinate, bath and wash in the river and almost all formal and informal residential houses septic tanks and dry pit latrines also direct their sewage to the course of the river. In general the area becomes the damping site of all liquid and solid wastes.
- Besides, industries such as: tanneries (Asko, Awash, ELICO, Kangaroo, Leather and Leather products Technology Institute); Liquor Factories (Mekanissa, Asko), and some other medium and small scale industries which were legally/illegally built on Akaki riverbank also direct heavy and toxic wastes without any legal permission of Addis Ababa Environmental Protection Bureau.

6.2 DISCUSSION

This section deals with the problems and questions of the study identified on the basis of literature review and make an attempt to correlate empirical observations with the current knowledge. Five interrelated lines of inquiry were identified and five focus areas of study were investigated. The focus of discussion will be the empirical findings outlined in section 6.1 and the issues raised in section 1.4.
The issues raised herein under were:

Who are the first settlers that came to the riverbank area? What are the main characteristics of these informal settlements and their impact on the environment? How do public administrators perceive informal settlement development spatially and tenure ship wise?

6.2.1 Identity of the settlers

Unlike other types of informal settlement riverbank settlement starting from its formation up to the present day has its own peculiarity out of which social composition of settlers, reason of attraction to such area, and status of ownership to the occupied land are extremely different. According to explanation given by Ato Gettu Yirga, Amrachoch and Gurage sefer resident, and W/ro Wolete Nisrane, Sore Amba informal settlement resident prior to irrigation activity the area was no man's land except the upper meadow area. Both residents quite clearly relate the formation of Great Akaki riverbank informal settlements with a time when the whole country was invaded by the Italian colonial force.

The study result shows that the earlier settlers were Gurage people coming from the same origin which were attracted to this particular area to solve communal problems; primarily to find job opportunity and habitable space very close to irrigation field. This circumstance had continued till the collapse of the socialist government. Later on when there was change of government, even though land remains under the control of the state, the policy issue on land has totally changed. Land began leased out, government housing program especially for extremely poor society like self help housing, low interest rate loan, supply of building material at low price, provision of technical support, organizing the community under housing cooperatives totally stopped. This situation has in the main aggravated housing shortage in the city propelling the emergence of informal settlements on open spaces, city expansion areas, along the streets, farmlands, green areas, and riverbanks.

Usually following government change, election, evening times, weekends, and holiday's informal settlers occupy government lands illegally. Informal settlers could be classified into two categories; the first one is land invasion on accessible and exposed areas which is done by middle class people and the other land invasion on inaccessible and hidden places which is done by poor people. The middle class people are financially stronger than the poor, who could allow them to get consultation from municipality planners how to parcel the land, arrange blocks, and what type of houses they should built. In the contrary the poor do not have any consultation and know-how about the short and long term government polices. Only to alleviate their immediate demand for shelter they simply erect temporary mud houses along the river and start residing in them.

According to the empirical findings and the study on survey questioner, physical observation, interview of some relevant government officials, and examining government policies on the last one and half decade poor people are unwillingly pushed out from urban centers. In general, regardless of ownership on the settled land poor people who do not have any choice are attracted to this area only to get cheap house rent and parcel of land with reasonable amount of money out of any government bureaucracy. Although, this is the fact which is seen on the ground different pulling and pushing factors have tremendously escalated land price from day to day. At present land price per square meter is high although it varies from place to place; for instance in Sore Amba Birr70/M^2, Cheri Birr120/M^2, and Amrachoch and Gurage sefer Birr485/M^2. Where as house rent for single room in different case study areas does not exceed one hundred birr. As I have described earlier the socio-economic composition is ethnic based and the per capital income of the settlers appears to be below poverty line. Most of the settlers are engaged as vegetable growers, work as daily laborers, hawkers, employed as guards, low-waged governmental, non-governmental, and private institutions.

6.2.2 Main characteristics of riverbank informal settlements and their impact on the environment

As described in Chapter 5 at all case study areas, an attempt has been made to elaborate the general characteristics of riverbank informal settlements in terms of physical characteristics, socio-economic conditions, environment, politics, and legal aspects. In each framework of the study different issues have been raised and assessed to understand the magnitude, and in the mean time the main highlights have also been indicated. Therefore, to illustrate the main characteristics of the

settlement it is tantamount to understand and discuss the unique physical characteristics, and settlers impact on the environment.

A) Physical characteristics

Riverbank informal settlements were established on ragged topographic features, inaccessible marshy lands and hilly terrains where no one could easily reach to the area without motorized traffic. The organic settlement pattern, plus very narrow muddy surface of spider web foot path and donkey passage are the typical manifestation of the settlement. Usually settlers develop the area without any planning concept; it has been performed randomly. In the earlier period since such areas were far from basic services land value was insignificant; plot and block size may not be determined though could be extended according to the interest of the occupant. However, the scarcity of habitable space in the inner city has changed the trend of expansion of the settlements.

The piecemeal housing development is widely observed in the area, either single house stands on individual plot or a combined house arrangement i.e. one or more houses attached together on communal plot. Depending on its locality and current development of the nearby area comparative irregular shape plot size exist in different case study areas. The area however varies in Amrachoch sefer 52m^2, Sore Amba 115m^2, and Cheri 297m^2. Like plot layout similar irregularities have also been seen in block arrangement. Most plots do not have fence but some have old corrugated iron sheet, eucalyptus and/or shrubs. Therefore, it is difficult to define each plot and block is very difficult.

As described earlier up to now since the area is less attractive to the government body, poor economic background and low knowledge of the settlers' size of blocks and plots are simply determined on site with traditional measurement such as using rope and foot. Both sub-division of plots and irrigable land transformation are equally entertained. Except Amrachoch sefer which more likely has grid iron type blocking arrangement almost all other settlements do not have any geometrical pattern. Moreover, settlers fear of government demolishing and eviction brought haphazard situation and instability in the overall settlement. Regardless of considering the future prospect of the area and ratified town planning rules and regulations settlers simply settled on protected forest zone and irrigation space by erecting temporary shelters.

Unlike settlements in open spaces and expansion areas, the informal settlements along river banks did not apply proper street layout, plot division, and use of permanent building materials. Instead, every step was applied in the contrary direction, houses were built with temporary building materials like eucalyptus splint walling adjoined with chika mortar and covered initially by plastic tent and gradually replaced by corrugated iron sheet shade (Zanigaba) roofing. The construction activity is not time taking like others, since it requires simple construction technique which might need not more than three days. Except wall erection and roofing large part of construction activities are performed by unskilled labors in a sort of communal task by inviting immediate neighbors, close friends and relatives of the settlers. They use only less costly temporary building materials.

Each housing unit consists of two or three rooms with an average floor area of varying sizes, Cheri informal settlement $32M^2$, Sore Amba $42M^2$, and Amrachoch sefer $56M^2$ respectively. The floor area of each room may range from the minimum of $7.7M^2$ to the maximum of $24M^2$. Block size also varies from a minimum of Sore Amba 0.13hectar to the maximum of 5.4hectar in Cheri informal settlement. Regarding density the highly populated area is Amrachoch sefer having about 653people/hectar followed by Sore Amba with 645people/hectar.

The inapplicability of the two successive plans of the city and two regulations in the area do not permit government bodies to implement basic infrastructure. Except electricity the availability of basic services remains under question. Particularly the provision of potable water and making an intervention to the street layout are still neglected, thus inhabitants are obliged to travel very long distances either on foot or use donkey to find potable water. Whereas, in far reached areas like Cheri informal settlement the only alternative source of water for drinking purpose is spring.

Most houses built in row on hilly terrains and some dwelling floors are suspended on the air, toilets and kitchens are communal, as a resulting bad in housing conditions. In addition to this poor sanitation, and the dominant role of religions in and around the settlement have brought huge repercussion on the inhabitants' health condition. Especially in some case study area like Sore Amba, even though it is located at a walking distance to urban center and very close to Merkato, problems of health reached at high level. The existing situation is incredible where majority inhabitants being illiterate, lack of awareness to modern medicine, and the presence of the two prominent religions very close to the settlement plus poor economic background of the society make the area to be more like rural settlement. Moreover, when frequent flooding occurred at times houses, domestic animals, and human beings are drowned. From these facts we understand that to alleviate such chronic problem of the society and revitalize the settlement governmental, non-governmental organizations and the end users should work together.

B) Settlers impact on the environment

As it is already described earlier when the settlement began along the river people were using riverbank area only to perform irrigation work and some related activities. Initially the environment was natural and friendly and settlers were using the river course only for irrigation activity. During that time the number of settlers was not large and the level of environmental damage caused by the inhabitants was also limited. Instead, they were properly utilizing river water and keeping their environment. However, after a while when different industries were established along Great Akaki river and began releasing solid and liquid waste towards the river, the natural environment started to be polluted.

Following the release of solid and liquid wastes by light and heavy industries, residential houses started to simply drain and damp to the river without any government control. In addition to this excessive cutting of forest for house construction and economic use, extraction of masonry blocks from riverbank quarry sites, frequent flooding exposed the land for soil erosion, landslide, and deforestation. Even though, the first intention of the settlement was to contribute their share in urban agriculture, an alarming growth of new housing blocks, the conversion of irrigation field and forest land for residential purpose, and excessive discharge.

of industrial waste has led to hazardous situation on the overall environment. These unappealing situations have made riverbank settlements harmful rather than being working and living places.

Before the preparation of the Addis Ababa Structural Plan the Japan's international technical agency experties prepared flood control study along the major and minor rivers both on the renewal and in built up areas. The study highlighted 50Meters set back in renewal areas from the mouth of the river, and 15Meters setback in built up areas. Few years later when the City master plan was revised more general green frame study was made to abandon the environment calamities. Different proposals were suggested to protect and improve the overall environment. The first proposal which was made by JICA, and the successive studies done by Policy Study and Planning Commission of Addis Ababa City Administration comprise how this peculiar areas shall be handled both by private entrepreneurs and government bodies. It is indicated that the areas shall be allocated for urban agriculture and wood land. At present the existing method of irrigation in the case study area is very old and poorly managed, and hence tackling such problem necessitated a suggestion of modern way of farming and mutual effort to achieve healthy environment.

Even though, the Addis Ababa Environmental Protection Office is young currently it has taken full responsibility to control and protect environment pollutants of the city. Among which riverbank area is part and parcel of the city green frame agenda. This sector has been carried out and developed legally and/or illegally by different bodies for years. Currently to implement ratified rules and regulations accordingly riverbank areas need clear demarcation line on the ground, and an in-depth socio-economic study on such peculiar part of the city. Beyond that it is an urgent task to identify the legal and illegal settlers, which is going to be done with full participation of the community and related governmental and non-governmental organizations. As literally described by the responsible official during implementation period it is paramount important to consider and integrate vegetable growers like any other investors. They should be considered as earlier promoters for up keeping environment by cultivating riverbank areas.

The Ethiopia Civil Code under Art.1447 describes that water ways are part of public domain and the ownership and use right shall be governed by the provisions of Art.1228-1256 of this code. Following this The Ethiopia Federal Democratic Republic government has declared two proclamations to protect and control environmental pollutants, safeguarding human health, maintaining biota and the aesthetic value of nature, and assessing and predicting environmental impacts caused by different development activities. Although, these proclamations ratified and declared by the government as mentioned things are under the process, the fate of the settlers as well as our environment are in the hand of the government in particular and the public at large.

According to the findings of this study development plans seem not to consider the existing social fabrics. It is totally neglects the future fate of the settlers. Thus to enhance the livelihood of the informal settlers and to achieve clean and beautiful habitable and working city environment all concerned bodies such as government bodies, private entrepreneurs as well as the inhabitants should work jointly.

6.2.3 Public administrator attitudes towards spatial development and tenure ship right of riverbank informal settlement.

The sporadic growth of informal settlements in the metropolis in general and riverbank in particular become a treat for the City development. City administrators have been trying successively to stop informal settlement by demolishing houses and eviction of the settlers. This trend however would not terminate as expected. Instead settlers become conscious where to go and build their house, and how to handle bureaucrats. Particularly since riverbank informal settlement are poor people to protect and hide themselves they choice inaccessible government uncontrolled riverbank areas.

Public administrators such as: Sub-City Managers, Kebele Administrators, Police Officers, and some other officials view towards riverbank settlement are different from other area informal settlement. Sub-city managers usually considered the settlements as a ground of all illegal activities and hiding place of illegal people. There is no any special program for riverbank informal settlement in terms of rehabilitating the existing haphazard situations, and protect from government interference such as demolishing and eviction programs. Very seldom, those settlers who are economically capable and settled on permissible area and which do not violate the two pronounced regulations are expected to acquire their title deed.

In the contrary, local administrators although sharing the sub-city managers' opinion having some positive attitudes to alleviate the existing physical, social, economic, and health problems of the residents. Several times they are going to such peculiar area to call riverbank informal settlers to discuss about their social problem, community development, family planning and some other related issues. But, most of the time the inhabitants' response to such move are negative, either they considered themselves as socially secluded group or else one day the settled area might be legalized or else taken away by the City administration for some other functions. Hence, they are not willing to come to kebele offices and participate in public meeting. Nonetheless, they always come to the kebele when they need identity card and supporting letters.

Like other officials the view of different Police station Inspectors' is almost similar about such type of settlements. They concluded these settlements as an area where all illegal activities are performed from the beginning of illegal house construction up to ordinary theft. Besides, being inaccessible and having meandering foot and donkey passage, compact and irregular housing block arrangement makes the area to be good hiding place for illegal people. In spite of the fact that there are some irregularities between political and legal matters, their role in urban agriculture is immense. Therefore, responsible government bodies should pay special attention for such type of settlement to bring health and sustainable development for the settlement in particular and the city in general.

6.3 CONCLUSION

The Importance of doing research in this particular area is not to detach from the core area of the city, but to ameliorate and follow up the present city structural plan. The key question that should be answered is whether the various agencies, the public, particularly government bodies would bring systematic development in the area. The striking point is how to balance shelter, livelihood and environment.

Two issues need to be highlighted physical and environmental characteristics. The physical part encompasses the existing settlement pattern and the planning polices and practices, whereas the environment part comprises the level of environment degradation and its effect.

In the former periods planning policies and practice towards housing played a pivotal role in enhancing the socio-economic development of the city inhabitants. Some of the government strategy to alleviate housing problem were provision of land, low-cost house program, self-help cooperative houses, low-credit housing finance, and beyond that cheap house rent was available in and around the city. Although, the government has been providing support in the form of subsidy providing land free of lease and improved access to loan for housing from banks significant improvement and change has not been recorded. Thus, unprecedented informal settlement all around the city including riverbank areas emerged. City inhabitants' particularly poor people who are not able to sustain urban life based on their economic group successively moved to riverbank areas to get only habitable and working space. In the earlier periods riverbank area was a place of vegetable growers, but from few years' onward most vegetable growing field and forest land was converted from its former function to chaotic residential neighborhood.

Poor socio-economic background of the settlers, compact and inaccessible settlement pattern, inadequate potable water supply, very narrow spider web foot paths and donkey passages, bad housing conditions makes the area to be a breeding ground not only for contagious diseases but also hiding place for illegal people. The city administration has undertaken different measures from demolishing up to recognition to control and protect informal settlements. Even though, these regulations have been practiced and give relief to some other informal settlements, in riverbank area we do not see any significant government intervention and public participation to implement government policy and resolve the settlement problems.

Excessive cutting off natural forest and eucalyptus tree for house construction, charcoal and economic use, clearing vegetable growing field and forestland for selling to newcomers, extraction of stone from riverbank quarry sites are the major environmental degradations in the area. Besides, during the rainy seasons when there is heavy rain frequent flooding occurred and harshly affects the settlements by demolishing residential houses, vegetables and animals are drawn to the lower part, and take away the most fertile top soil. The continuous discharge of toxic matters from different industries, residential houses septic tanks, and the area being damping place for different solid and liquid wastes has totally changed the overall natural environment.

Generally, all the above factors have contributed the area to be a place where no one expects to work and live, hence to get clean and healthy environment the total case study areas requires intervention. Therefore, to bring sustainable development and friendly environment in the entire riverbank informal settlements the three set programs (upgrading, regularization and renewal) have to be carried out simultaneously.

6.4 RECOMMENDATIONS

This section dealt with how riverbank informal settlements could be integrated with the present day dynamic city growth, and brings sustainable development in the livelihood, shelter and environmental factors.

Although the city administration has a revised master plan the details for implementations have to be worked out in LDPs. Likewise government participation in the area is very restricted and no riverbank informal settlement study is done up to now. This shows that the area was neglected for a long period; as a result no development is seen in the area. Now, it is time to call the public agencies, governmental and non-governmental organizations, international community, and the end users to alleviate the existing social, economic, physical and environmental problems.

The research shows that riverbank informal settlements need an immediate curative measure to perform their own task properly; otherwise the livelihood of the settlers plus our environment will be endangered. City planners in conjunction with the City Administrator, politicians and the community should take further study to explore the real facts from top to bottom. According my study I suggest some relevant recommendation to enhance the existing social, economic, physical and environmental situations.

Today we are living in a globalize world hence to enable us to live and work with the international community we should follow and accept the international convention of housing. The Istanbul Declaration (1996), Habitat Agenda: Paragraph 56 states that “National Governments can do to enable local communities to solve problems; the actors who will determine success or failure in improving the human settlement conditions are mostly found at the community level in the public, private and non-profit sectors. It is they, local authorities and other interested parties, who are on the front line in achieving the goals of Habitat II. Although the structural causes of problems have often to be dealt with at the national and sometimes the international level, progress will depend to a large degree on local authorities, civic engagement and the forging of partnerships at all levels of government”.

The enabling approach to shelter has become the guiding principle of housing, "Enabling" means facilitating private production of housing with support of community initiatives *and at the same time* intervening in favor of the most disadvantaged groups so that they gain both market power and political voice (Turner 1992; Hardoy and Satterthwaite 1991).

In line with the Istanbul declaration and the habitat agenda, government grand housing program and positive attitude to participate in informal settlement affairs and willingness of the community to renew the settlement are the major elements that need urgent solutions. The enabling approach which is now carried out in every part

of the world is the most convenient planning approach which could serve as a tool to alleviate the riverbank informal settlements housing problems by participating every sectors of the society i.e. the Community Groups, Local and National Governments, Non-governmental Organizations (NGOs), and Professionals. Thus to undertake the program the role of each group shall be clearly identified in order to enrich and implement the proposals.

6.4.1 Community organization

The community groups are the end users of the program and responsible to materialize the housing project in the settlement, so settlers should be organized to participate and make decision in every sector of the settlement affairs. Riverbank areas, mainly Sore Amba, Amrachoch and Gurage sefer inhabitants are organized groups that have been working and living in the area at individual and communal levels. Except Cheri informal settlement at every settlement there is one Vegetable Growers Association established by the community and delegated only for horticulture activity in search of market place for agriculture products. Currently the associations are operating as a bridge between the community and different aid organizations and government bodies.

These member of the society and other group like the Gamo weavers, daily laborers, hawkers, etc should be organized under the supervision of the local authority to get access to the government supported micro finance enterprises, and other non-governmental institutions. Unorganized inhabitants shall be grouped under one association with the most relevant jobs like dairy farm, animal husbandry, poultry, bee keeping, etc. Once the inhabitants get organized and form one responsible association which is working for the well being of inhabitants, they will have access to different institutions and start to demand their need and express their prospect. Financial institution that has long experience in the provision of low-credit loan to small scale enterprise should come to the area and allow them to participate and accelerate the working environment. In addition to this to enhance the livelihood of the settlers other market oriented financial institutions, humanitarian agencies, non-governmental institutions have to come and build the capacity of the settlers. Meanwhile, other sector offices have to look and facilitate where settlers could sell their products. These activities must be continued persistently to elevate the settlers' financial background, therefore they can alleviate their housing problems.

6.4.2 Professionals

Planners should play proper role to provide applicable solutions to the settlers, and act as an advocate planner to mediate between the government and the most neglected riverbank informal settlers. The planning team shall comprise member of various professionals such as Architects, Town Planners and/or Urban Designers, Physical Planner, Economists, Geologists, etc. Subsequently, planners should follow not comprehensive planning approach; people centered incremental and participatory planning approach shall be adopted to fulfill the short and long term interests and needs of the inhabitants.

- Ø Planners should work in conjunction with the community based organizations.
- Ø Professionals have to be responsible to authorities and dwellers for promoting local initiatives.
- Ø Operating as intermediary between NGOs, community based organizations, user groups, the authorities and any suppliers or contractors.

Livelihood, shelter and environment factors must be the focus of such a study. The analysis must put dwellers at the center of development and examine facts on the ground why inhabitants were not integrated to the present day dynamic City development. Thus in line with the above agencies and settlers existing situation assessment shall be conducted.

- Ø The livelihood change of every single household through times should be assessed.
- Ø Inhabitants view should be respected and call them to participate in planning discussion.
- Ø Define the impact of different government polices and arrangement to poverty reduction program.
- Ø Assist and work with the inhabitants to achieve better livelihood, shelter and friendly environment.

The existing planning practice of the city administration is very comprehensive and does not go to the detail; even they do not have study on riverbank informal settlement. Before few years back there was flood control office which was working under the municipality to protect and provide the coordinated effort of the planners, community involvement, participation of donor organizations, and local government assistance in all round activities is important to make the projects feasible and more acceptable. But the role of the government should be limited only to providing technical assistance, establishing legal matters, organizing inhabitants, facilitating bureaucratic matters, controlling, and to a certain extent financing the project. Generally, to address the problems of urban poor particularly that of riverbank informal settlers, government involvement in construction activity and distribution of finished blocks has to be stopped; instead planners should take responsibility to assess the problems from the grass root level and come up with positive solutions and some proposals.

6.4.3 Local & National government

Neighborhoods are the place where all solutions begin and end, and the basic unit for operating the principle of sustainable development, better housing policy must be grounded on the real life of the society at local level. City Administration has been doing different projects to alleviate urban dwellers housing problems by providing and implementing wide range integrated housing development program all over the city.

The program was very promising and assumed to accommodate studio ($22M^2$), one bed room ($28M^2$), two bed rooms ($34.43M^2$) and three bed rooms ($50.6M^2$) type condominium houses. City inhabitants particularly the urban poor who do not have their individual house and earn < Br.670/month is expected to account for 80% of the total housing program. The housing department in different sub-cities registered more than 530,000 people including those who can not afford to pay even the premium payment.

The central government has the responsibility to create an enabling atmosphere for housing development in the settlement and perform full-fledged work with the community based organizations.

- Ø Provide professional like surveyors, technician, planners, etc. to do planning work with other concerned agencies planning professional and consultant.
- Ø Create and facilitate small scale enterprises in the settlement to enhance the settlers economic and the housing project to be viable.
- Ø Supervise projects which are carried out in the settlement, coordinate and allow local and international agencies to fully participate in the community-based housing production.
- Ø Support inhabitants' individual or collective efforts in the process of revitalization of the settlement and protection of environment.

Local government officials have big share in the community development program starting from the scratch up to final stage, as government institution it should serves as a bridge between the settlement and different organizations.

6.4.4 Community participation

The most comprehensive and far-reaching policy shift in housing came with the adoption of what has become known as the "enabling approach", crystallized in the "Global Strategy for Shelter to the Year 2000" adopted by the United Nations in 1988 (UNCHS 1991c). The "enabling approach" actually covers a range of positions in terms of the state-market policy mix, but its underlying philosophy is clear: governments should withdraw from direct provision to "enable" shelter development by others in a supportive legal, financial and regulatory framework. Therefore, enabling approach allows the community to participate and suggest various alternative opinions during planning and construction development stage. In addition to this to create more favorable and effective working atmosphere some supportive measures shall be carried out during renewal process, which might include.

- Ø Updated market information to understand the availability and actual price of land and house.
- Ø Market oriented training on housing development, communal tenure ship right, democratization, different agencies role in the integrated community development and eventually make them to be self sustained community.
- Ø Provision of appropriate and cost effective Technology. Local experts should provide technical assistance during design and construction periods in order to get access to better design, less costly building materials at cheaper price. Meanwhile, the house construction technique also guided with modern and cost effective building materials and cheap labor from the settlement.
- Ø Capacity building on both leadership skills and technical knowledge is a prerequisite for success. Over and above participation in decision-making, there should be community involvement in the actual project implementation as a way of contributing towards social and economic development.
- Ø Awareness of legal conditions on planning laws, building regulations and bye-laws. This would enable them to easily understand legal matters mainly in regard to private and communal properties ownership right.
- Ø The key lesson that can be learned from international good practice is that real community participation is essential, at all levels from strategy level down to project implementation stage. Participation in land allocation processes, layout design and house design in particular is very important.

6.4.5 Housing

Currently all riverbank informal settlements need urgent intervention and they requires renewal program to improve physical and environmental characteristics, promote social development and delivering basic social amenities and infrastructures. In the process of renewing the settlement settlers for a short period of time may feel unhappy but in the long run they will be beneficiary. Living in a clean house and environment mean improving productivity, improve health condition, reduce disparity, and reduce housing shortage. All round development encompass allocation of parcel of plot for communal use and tenure ship right, provision of appropriate infrastructure, facilitating access to low-credit housing loan, undertaking house construction, and provision of technical and institutional support. In response to the above mentioned factors the following critical issues should be included in the planning period as well as in the feasibility stage.

- Ø Part of the city where overpopulated informal settlements exist like Akaki riverbank area shall have a detail study map and legislation to attract new development in the area and to restrict new informal settlement along the river line, vegetable growing field and forest areas.
- Ø Ensuring tenure ship right gives sense of ownership, allows feeling comfortable in the settlement and encourages participation for the immediate and future community development. It includes policy guidelines and legislative measures for adopting land sharing arrangements to increase floor spaces.
- Ø Norms and regulations should be formulated for the settlement in general and building blocks in particular, hence residents could easily differentiate communal property from the private one.
- Ø Progressive development shall be undertaken to acquire good neighborhood gradually. The settlement plan and building blocks arrangement must be flexible in order to maximize density and open spaces.

Therefore, provision of small parcel of plot for communal use to build three floors building to accommodate different dwelling house at a time would bring healthy and friendly environment to work and live together at a time.

6.4.6 A model for solving riverbank informal settlement

At this stage to make detail urban design study for different case study areas may require long technical procedures and adequate financial background. It is very crucial to intervene in the areas and give appropriate professional solutions. Among which the most highly congested settlement and still large number of informal settlers attracted to the area is Sore Amba informal settlement. Being inaccessible to any motorized traffic, no tenure ship right over the land, endless deforestation has not only endangered the present generation but also hinder the overall future City development. Particular attention shall be given and needs urgent planning measures to resolve the existing hazardous livelihood, shelter and environmental conditions. Thus, in respect to the above conditions Sore Amba informal settlement is chosen as a model for solving riverbank informal settlement how they could be integrated with urban areas.

The enabling approach more likely participatory way of community development would meet the actual demand of the society and accelerate the general socio-economic condition. Unlike other type of informal settlements upgrading and regularization alone can not come as a solution to resolve such type of informal settlement. Moreover study of a similar case from South Africa suggest that relocation on a nearby site is more appropriate, hence renewal thought to be a strategic measure that could improve and enable the settlement to continue to exist. Therefore to accommodate settlers within the settlement a preliminary urban design solution is proposed to transform the old neighborhood in to well designed compact settlement.

The following are basic assumptions of the proposals:

- Horizontal development shall be replaced by compact multi storey building.
- Depending on household size and financial capacity of the settlers room size may differ but it has to be minimum floor areas and cost effective. The City Administration Housing Department has implemented very small size studio, one, two and three bed rooms' typologies, and the most applicable design more relevant to such type of settlement is three story condominium building that consist from studio up to three bed rooms together with some subsidiary functions.
- To ensure rapid growth in the area end users shall have communal tenure ship right over the land and private owner ship on each dwelling house. Moreover, to secure sustainable development adjacent to the settlement various employment generating activities have to be established.
- The number of inhabitants determined the type of services which are going to be included in the general proposal. Thus for 2696 population at least the minimum requirement kindergarten, elementary school, health post, community office, assembly hall, and some other services shall be included.
- All works shall be performed in a balanced way which is according to the present demand of the settlers, structural plan of the City, and in line with the government short and long term housing program. The ongoing process of decentralization decision making processes would help minimize bureaucratic procedures and waste of time and energy. In this regard community participation shall be respected, planners' involvement is so paramount, Non-governmental organization and various donor international agencies are expected as source of finance and technical advice, and beyond that the role of the government in supervisory work and budget allocation is immense to acquire better transformation.
- This study is peculiar in the sense that it dealt with a number of components of an informal settlements such as agriculture, housing and manufacturing. Therefore regulatory framework in informal settlement areas needs to consider these components in an integrated manner.

6.4.7 Proposal

The existing number of population in the settlement, topographic feature of the area, available land for house construction and irrigation work and the present Structural plan and related byelaws and some other related issues shall be considered in the general urban design. As it is described earlier there are 2696 inhabitants in the settlement and 25hectars irrigation field and 8.43hectars land for construction activities. Considering this fact and figures very compact but vertically developed condominium houses that accommodate basic functions like community meeting

hall, office, entertainment place and other employment generating activities are tried to be integrated in the overall development.

According to the structural plan, western part of the settlement beyond Akaki River is proposed for forestry and eastern part for residence, whereas the Addis Ababa green frame study recommended riverbank areas where renewal takes place from the tip of each side of the river bank 50m is protected for greenery. Therefore, keeping this regulatory framework new settlement has to be established within the existing boundary to accommodate those who are displaced from the previous residential area and those who settled in the project area.

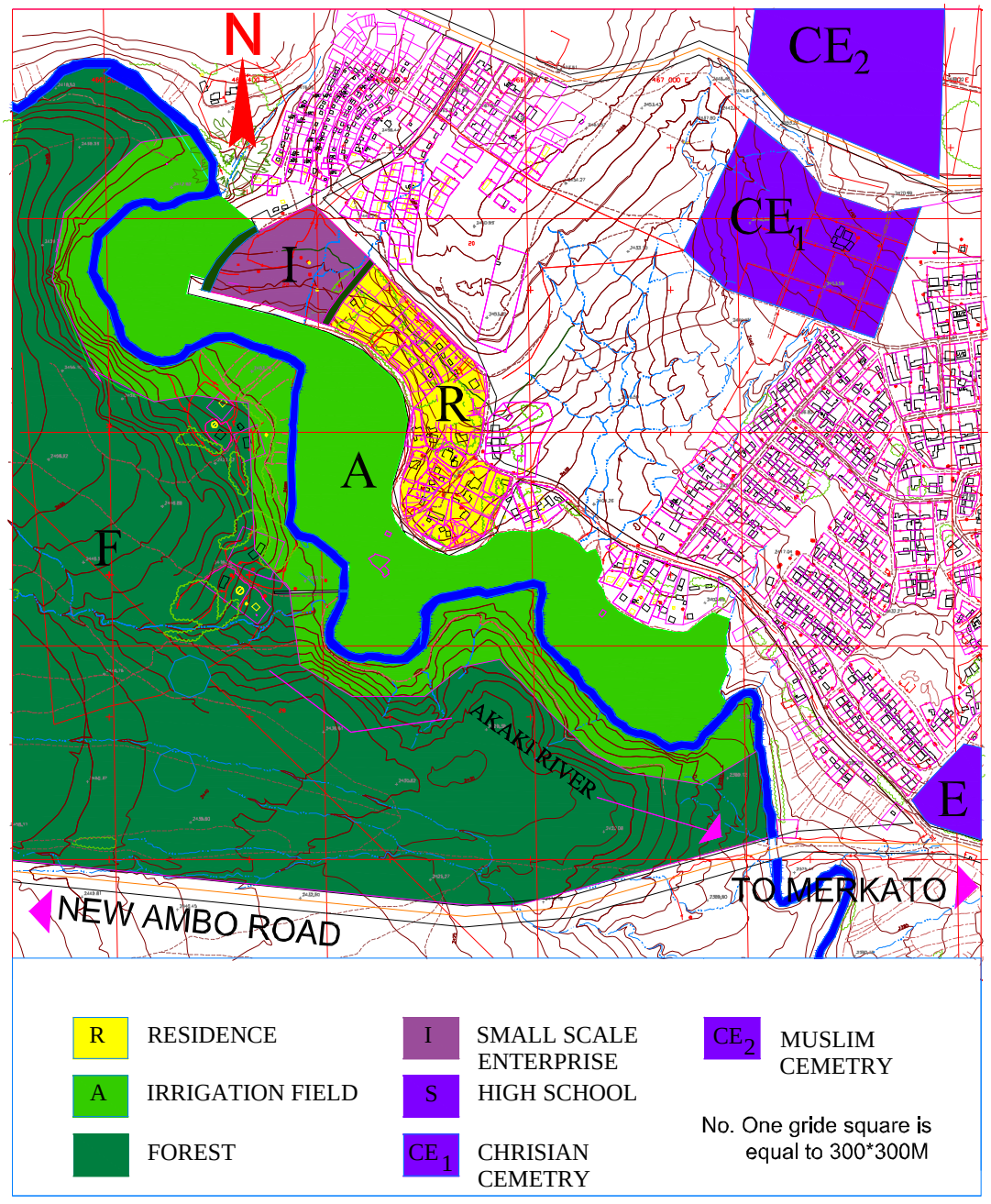


Fig.6.1 Proposed land use map of Sore Amba settlement

The average family size is (6) in relation to number of population (2696) gives the number of households (449). We need different housing units ranging from studio type up to three bed rooms condominium house to accommodate 449 families. One typical three story condominium block plan that comprises 16 households and three subsidiary functional rooms is selected for planning purpose, and to fulfill the present demand 28 building blocks are needed. However, the planning process does not only entertain the current need of the settlers but it is intended to achieve sustainable development. Thus Incremental housing development is recommended, in the first phase three floors building blocks will be constructed and on the later stage above the second floor of each building one or two floors will be added. See the proposal on Appendix 2.

Unlike city center housing development plot size is determined by physical setup of the ground, livelihood of the settlers, environmental characteristic and design pattern of the settlement. The plot size is ranging from the minimum of 1,000M^2 up to the maximum of 1,542M^2 where the average size is 1,370M^2 for 16 families and 80M^2 per household.

- The nature of Inhabitants particularly vegetable growers' livelihood demand more space within each premises to perform some additional works beyond irrigation activity. Thus the built up area of each building is 320M^2, whereas Bar ratio is 0.25 and Far ratio is 0.7.
- Kindergarten and Elementary students are not supposed to travel long distance from the settlement, so one school which accommodates the two functions together is proposed within the settlement. At a short distance from the school one health post is also planned.
- On the other side of the settlement on a very wide and segregated block community office building, assembly hall, workshop, warehouse, animal husbandry, dairy farm, poultry farm and small scale enterprises and some other functions are proposed.
- Streets are well designed and accessed to different residential buildings, school, health post, and communal activities. The road hierarchy vary depend on its function the first one 15 meter connect the settlement with the nearby neighborhood and 10 meter interconnect the newly established settlement.
- Above all the natural environment shall be kept and protected from any calamities through an integrated effort of the community, responsible government bodies like Environmental Protection and Control Office, Sanitation, Beautification and Parks Development Agency, and green movement local and international agencies.

Generally, creating favorable working atmosphere and habitable space in the newly established settlement seems unimaginable task; however, with full-fledged participation of the community and extensive support of planners, different governmental and non-governmental organizations remarkable goal will be achieved. Therefore, this planning model with some adjustments could be applied in the other two case study areas based on the existing Structural Plan and current government programs in and around the settlements. Eventually, I would like to remind this study should not serve as a prescription for all case study areas, so future study is an obligatory to resolve the actual problems on the ground.

Accordingly, The Istanbul Declaration and The Habitat Agenda paragraph 15 states that “The Istanbul Conference marks a new era of cooperation, an era of a culture of solidarity. As we move into the twenty-first century, we offer a positive vision of sustainable human settlements, a sense of hope for our common future and an exhortation to join a truly worthwhile and engaging challenge, that of building together a world where everyone can live in a safe home with the promise of a decent life of dignity, good health, safety, happiness and hope”.

6.4.8 Further study

As I mentioned earlier even though this research seems final to the specific riverbank informal settlements, but it require further studies based on the existing knowledge such as: physical, social, economic, environmental aspects of the settlements as well as current political and legal matters. The dynamism of regrouping people according their ethnicity to settle in one area and perform one specific job should get especial attention and need careful study. Moreover, it is very crucial to undertake an all–round study from the grass root level community demand up to the top of international arena habitat agenda to achieve sustainable livelihood and friendly environment.

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APPENDIX-1

Check list for research questioners

A) Household interview

1. Where do you live before you came to this area?
2. How long have you been living in this area?
3. How do you own the land?
4. What was the land function at acquisition period?
5. Did you think land tenure ship when you hold it?
6. Did you have any intention to report for construction permit to community organization like vegetable growers association or local government?
7. Why you choose to live informally on riverbank areas?
8. Who participated in the house construction?
9. What type of construction materials were used for house?
10. Why you prefer temporary building materials?
11. From where do you get construction materials?
12. Why you determine limited number of rooms and very small in size house?
13. Could you tell me the household size?
14. What is your source of income?
15. Is any one of your family member engaged in some other employment?
16. Do you have your own water tap?
17. From where do you get water for household use?
18. Do you have your own private electricity?
19. Which type of lighting do you use?
20. What is your source of energy/fuel for cooking and heating in the house?
21. Is there any telephone network in the area?
22. Where do you dispose off solid waste?
23. Why you use communal kitchen and toilet?
24. Is there any improvement on your home after initial erection?
25. How do you reach to basic services, is not it too far from your home?
26. What is your role in the community and in which part are you actively participating?
27. Have you encountered any problems when you perform community activities?
28. Do you have identity card from the local authority?
29. Did you get house number from Kebele administration?
30. Are you paying regular land tax?
31. Do not you ask the local authority and city council to get tenure ship right?
32. Have you planned to stay in the settlement or move to some where else?
33. Do you think this settlement will exist longer and how do you regard the present government policy?

B) Question to local administrator

1. When was informal settlers started to settled on riverbank areas?
2. At which period of time was highly invasion of land takes place?
3. Who is responsible to protect informal settlement?
4. Do not you suspect it would not be danger for development?
5. Why they do not built good house?
6. How is their interaction with donor organization?
7. On which community affairs are donors pay attention?
8. Are they strong and active when they perform their specific task?
9. Do you have occasional meeting with the inhabitants?

10. Which issues do they raise when you meet?
11. Who is responsible on land issue?
12. What do they fill being located within city boundary and informal?
13. Is city administration regarded them as city inhabitants who do not have choice or violators?
14. What are the primary conditions to develop this area?
15. In some area the municipally undertake some constructive majors, whereas in such settlement we do not see any significant intervention. As local administrator how do you look it?

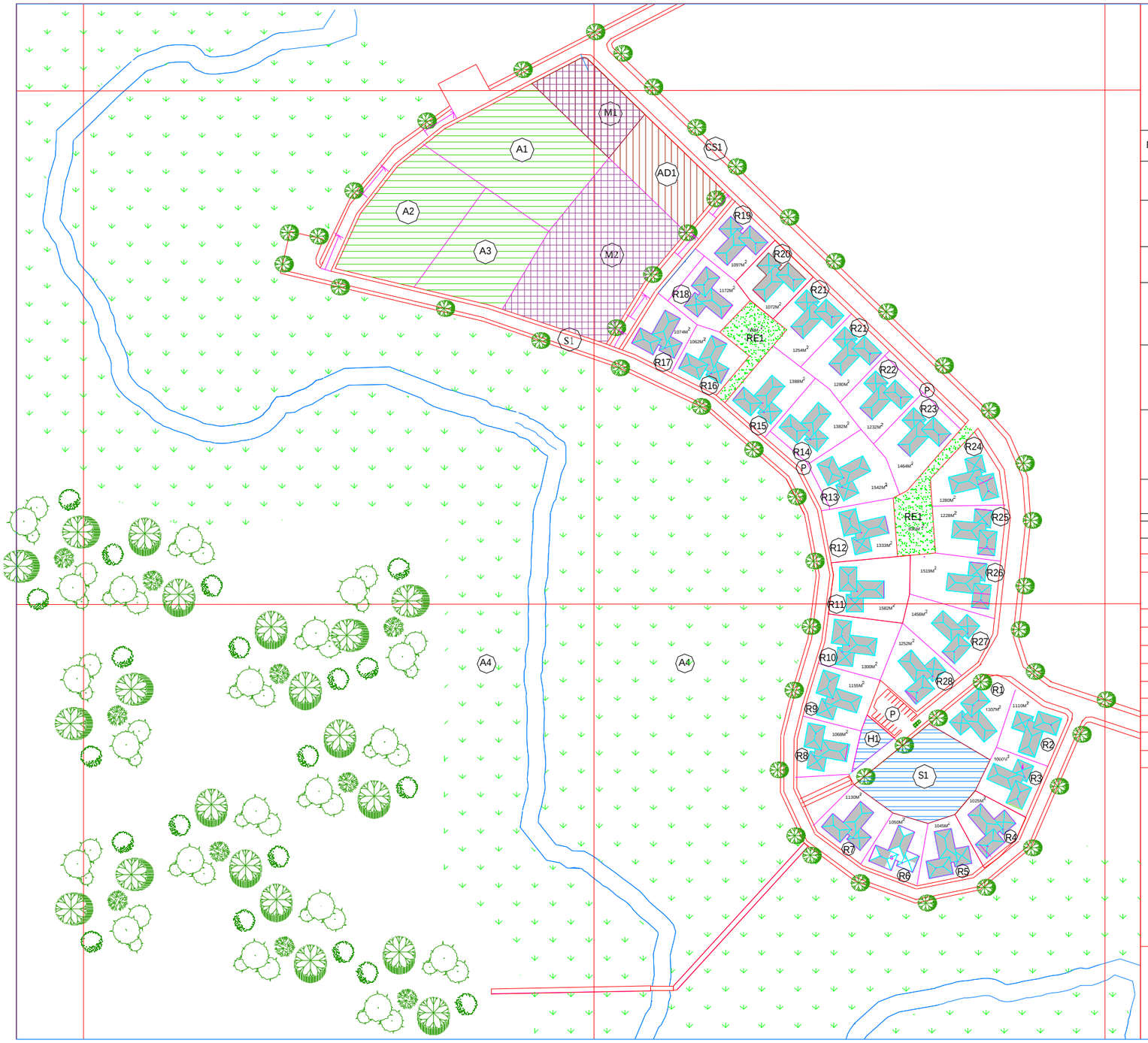
C) Community representative

1. Is there any other organizations operating in the area?
2. What is the specific concern on the settlement?
3. Are the inhabitants fully involved in the community meeting?
4. Do you think public meeting is satisfactory?
5. What is the real problem they faced being unplanned settlement?
6. Are you working with city administration on how to integrate with the planned settlement?
7. Do you pursue some sensitive government policies like regularization, upgrading, environmental control and protection and other related issues?
8. What is the role of vegetable growers association towards legalizing the settlement?
9. What would you suggest as a solution for such type of informal settlement?

D) Professional planner

1. What is the stand of the city administration towards riverbank settlements?
2. Why the two pronounced regulations do not actualized in such type of settlement?
3. On 1995 topographic map some houses have house number while others do not, could you tell me the reason why it happen like that?
4. Do you know the historical growth trend of riverbank informal settlement?
5. Is there any significant difference between riverbank and other type informal settlement?
6. Which social group prefers to settle in such localities?
7. What are the main problems according to your opinion?
8. Is there any government program to such type of settlement?
9. Do you think this settlement will exist in this situation for the next few years?
10. How is the role of non governmental organizations to alleviate the existing physical and socio-economic problems?
11. What do you suggest as a permanent remedial solution?

APPENDIX-2 PROPOSED DEVELOPMENT PLAN OF SORE AMBA SETTLEMENT



SORE AMBA INFORMAL SETTLEMENT RENEWAL PLAN

PROPOSED LANDUSE

N

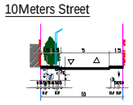
No.	LANDUSE CLASSIFICATION	CODE	AREA M^2
1	RESIDENCE RESIDENCE (MIXED)	R R1-28	35860
2	EDUCATION KINDERGARTEN AND ELEMENTARY	S S1	2665
3	HEALTH HEALTH POST	H H1	340
4	ADMINISTRATION OFFICE ASSEMBLY HALL CAFETERIA	AD AD1	2070
5	MANUFACTURING WAREHOUSE, WORKSHOP FLOUR MILL AGRO-PROCESSING	M M1 M2	1840 5890
6	AGRICULTURE ANIMAL HUSBANDRY DAIRY FARM POULTRY HORTICULTURE	A A1 A2 A3 A4	 4730 3950 2950 250000
7	RECREATION OPEN SPACE	RE RE1	 1555

	SUMMARY	
1	Horticulture Area	= 25Hectar
2	Total Area of Other Functions	= 8.43Hectar
2.1	Office, Warehouse, Workshop Animal husbandry, Dairy farm, Poultry	= 2.1485Hectar
2.2	Residence	= 3.5860Hectar
2.3	Parking	= 0.1292Hectar
2.4	Open Space	= 0.2602ectar
2.5	KINDERGARTEN AND	
2.6	ELEMENTARY	= 0. 2665Hectar
2.7	Health Post	=0.0340Hectar
2.8	Street	=2.0061Hectar

ROAD CLASSIFICATION

15Meters Street

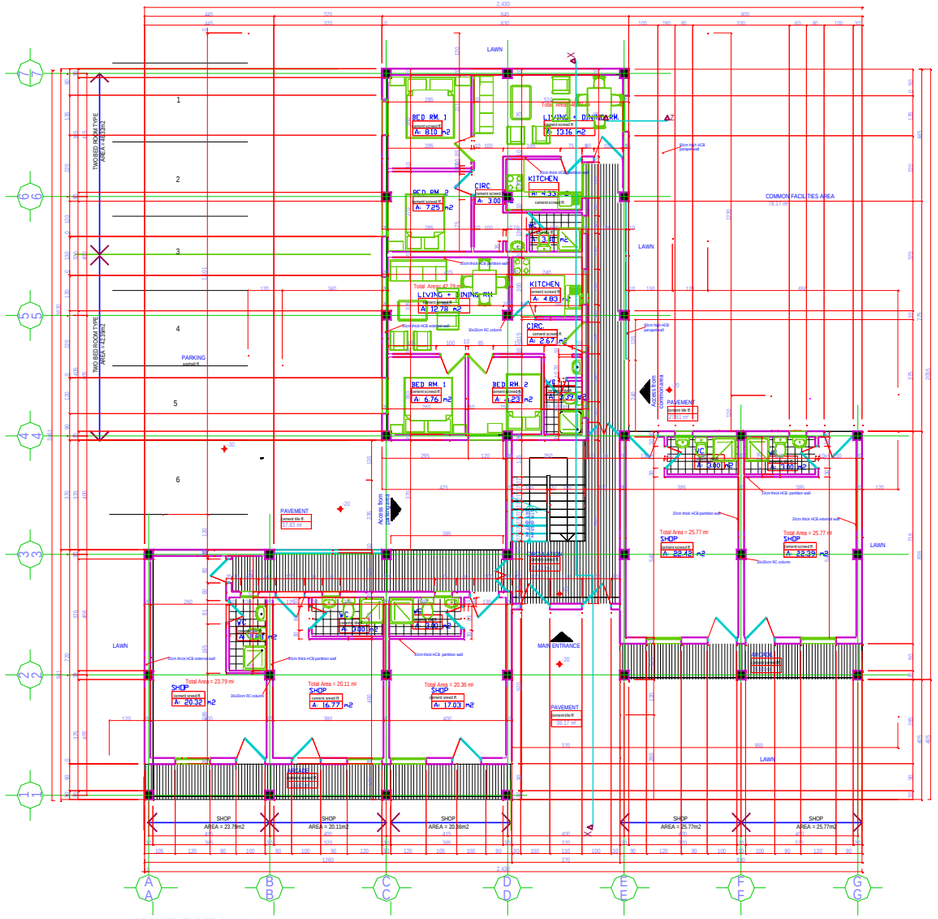
10Meters Street



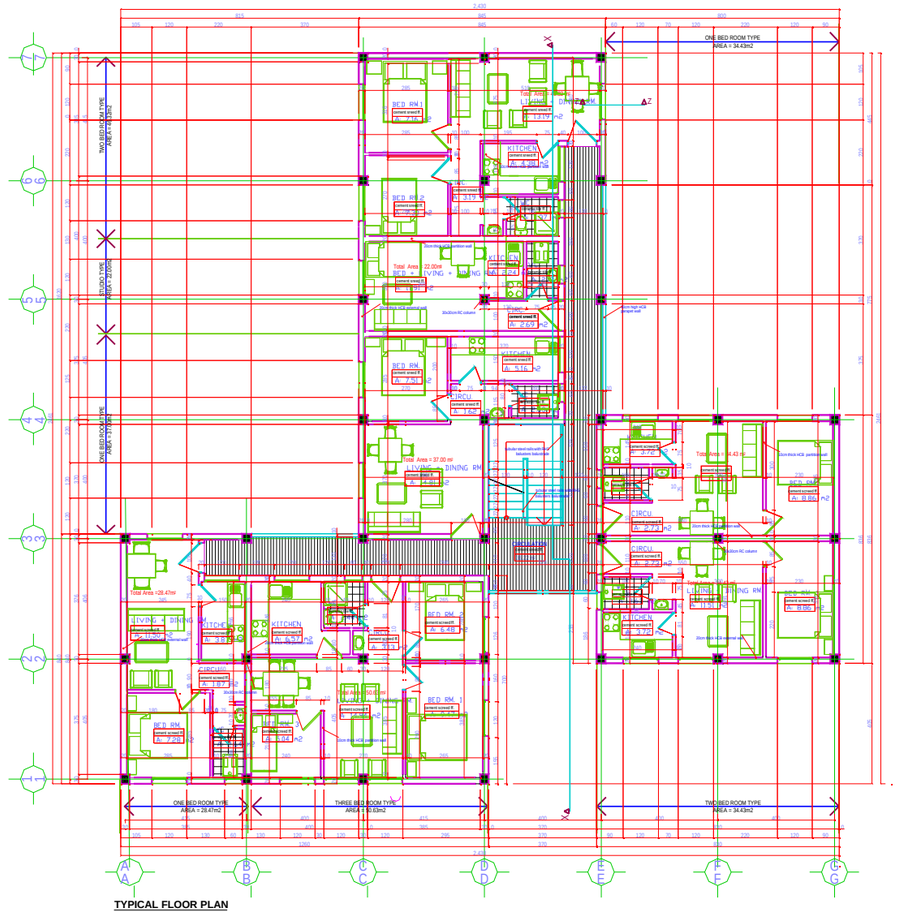
LEGEND
E - Electric
T - Telephone
W- Water
D - Drainage
TS- Traffic Signal And Street Light

No. One gride square is equal to 300*300M

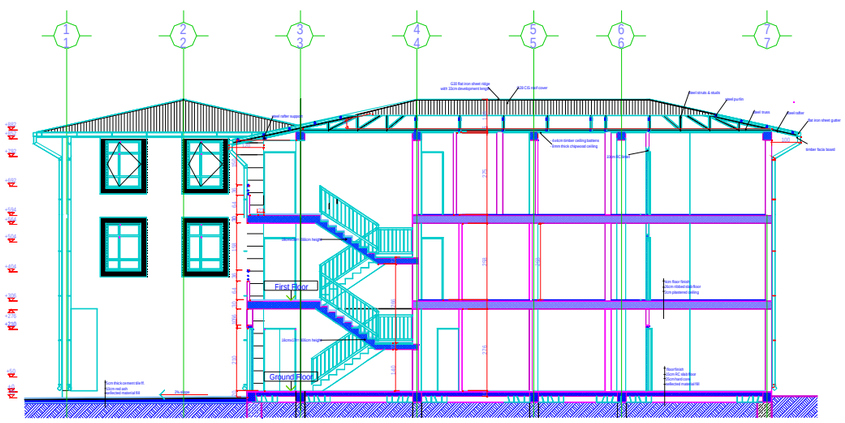
SITE LAYOUT



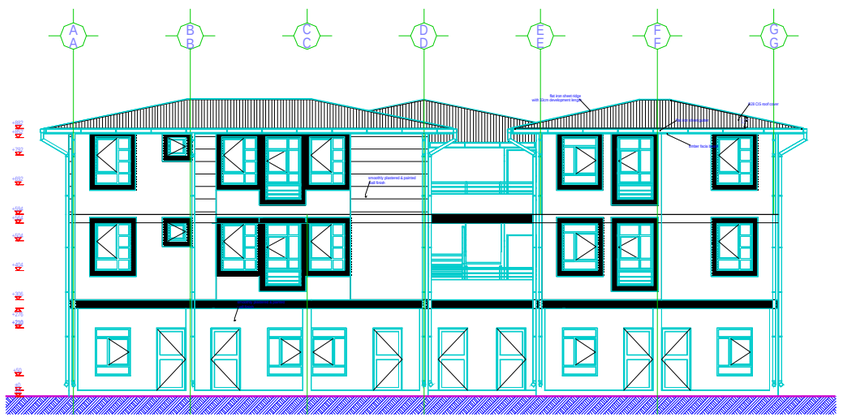
GROUND FLOOR PLAN sc: 1 : 100



TYPICAL FLOOR PLAN



SECTION X-X sc: 1 : 100



FRONT ELEVATION sc: 1 : 100

TYPICAL HOUSE PLAN FOR SORE AMBA SETTLEMENT
Source: Addis Ababa Housing Agency

APPENDIX-**3** Addis Ababa Rivers Map