

# Low and Middle Income Housing Project in Addis Ababa

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## Introduction

After the 1974 Ethiopian revolution, the rapid growth of population in Addis Ababa presents extraordinary pressure on the existing housing policy and on the entire infrastructure like water, electrical power supply, drainage and roads. Planned development of the past was unable to meet the needs of the community. With this background the Ethiopian Government took considerable effort to improve the housing conditions in Addis Ababa. For effective co-ordination of the programme the Government of Ethiopia created Ministry of Urban Development, Housing and Construction, the Urban Development Project Office and the Housing and Saving Bank.

The aim of this paper is to show that in order to achieve the goal of the housing programme within a reasonable time frame a co-ordinated action on housing policy is necessary. The response of the Ethiopian Government to the problem of housing by way of developing specialised housing finance institution and also by developing a comprehensive housing policy with community participation seeks to address the problem of shelter in more comprehensive terms.

### Abbreviations

AAAR	Addis Ababa Administration Region
AAWSA	Addis Ababa Water & Sewage Authority
HSB	Housing & Saving Bank
MUDHC	Ministry of Urban Development, Housing and Construction
UDPO	Urban Development Project Office
Currency unit	Ethiopian Birr
US\$ 1.00	= 2.07 Birr (during project implementation period) = 8.25 Birr at present

## Evaluation Summary

### Objectives

The over all objectives of the Government on the housing programme consist of:

- 1 Implement a new resource-efficient housing policy based on modest standards, self-help and individual initiative, thus easing the burden on public finances.
- 2 Strengthening the financial and professional capabilities of the Housing and Saving Bank, which would play a central role in implementation of housing policy.

- 3 Improve health and environmental conditions through upgraded services and sanitation, which should ultimately improve productivity within affected populations.
- 4 Reform policies and practices regarding maintenance of urban infrastructure and housing with a view to ultimate reducing rent subsidies and improving the efficiency of public recourse utilisation.
- 5 Strengthen two other key urban institutions dealing with land: the Ministry of Urban Development and Housing and the Addis Ababa Central Association (Administrative Region).

## Implementation Experience

The project was essentially completed by the original closing date of June 1990 albeit with a slight delay in construction of houses and community facilities due to delays in obtaining the Board approval, the shortage of building materials and change in project scope. The closing date was once extended to June 30 1991 to permit continued operational support to the project agencies while awaiting effectiveness of the follow-on IDA credits. The total amount allocated for the project was 57 million Birr for sites and services and 4 million Birr for upgrading.

### Facts about Ethiopia

Boundaries	North: Eritrea West: Sudan East-Eritrea, Djibouti and Somalia
Land Area-	1,112,000 sq. km, 65% arable land 9 regional states 2 city administrations
Climate	Two seasons, dry and wet: dry from October through May; wet from June through September
Topography	Ethiopia has an elevated central plateau varying in height between 2000 and 3000 metres, 25 mountains with peaks over 4000 metres.
Population	The population is estimated at 60 million, 49 inhabitants /sq. km 83 languages with 200 dialects
Economy	Agriculture is the backbone of the national economy, 90% of the population earn their living from the land. The main export products are coffee, oil seeds, flowers, sugar, hides and skins.

### Facts about Addis Ababa

Built in 1891 for political (military) reasons	Site for OAU Head Office Africa Economic Commission (AEC) UN and its Branches
<b>Area</b>	540 sq km (54,000 hectares), 18.2 % Rural, 71.8 % Urban
<b>Elevation</b>	2300–2500 m above sea level, with erratic slop, difficult for infrastructure installation
<b>Population</b>	2.3 million: 51.6 % are female, 48.4 % male
<b>Population growth rate</b>	3.8 %
<b>Temperature</b>	Minimum 10°C (Ave.), Maximum 24.6°C (Ave)
<b>Standard of Living</b>	From 2.3 million populations 35.5 % are under the poverty line (1994 census) Salary below Birr 300, USD 43 =46.4% Salary below Birr 450, USD 64 = 61% Economically inactive 37% (parasite 0-14 or >65)
<b>Population Dynamics</b>	Estimated infant-mortality rate is 78death/year/1000 births Expectation of life is 57 years for males and 60 for females. Fertility rate is 1.8
<b>Housing</b>	380,307 residential housing units with 97880 rooms. 2.1 persons/room. 74.1% have toilets
<b>Water Supply</b>	96.7 % of the housing units used piped water
<b>Lighting</b>	45.6 % of the total RHU has private electric meters 51.1 % shared electric meters and 3.3 % use kerosene lanterns

### Project Components

The project focussed primarily on key investments in the capital city of Addis Ababa. The main focus of the project were

- Development of about 2950 serviced plots for residential, commercial and industrial purposes, construction loans for development of about 2300 houses through self-help, upgrading infrastructure for about 800 existing families and construction of community facilities.
- Upgrade of roads, drainage, water supply and solid waste systems and provision of loans for upgrading of pit latrines and houses at the most congested area of the city.
- Provision of essential equipment and spare parts for vehicles for Addis Ababa Municipality to collect garbage and sanitary waste and improvement of roads.
- Establishment of loans fund for construction community facilities in project areas and for other development activities in kebeles (local administrative organs) throughout Addis Ababa.
- Housing construction loans for self-help upgrading or new dwelling construction; and
- Provision of training, advisory services, studies of urban transport operations, rental housing and road maintenance, management support for project agencies, and preparation of a future urban project.

### **Project Design and Organisation**

The project was primarily designed as a pilot demonstration in Addis Ababa of lower cost approaches to housing development and upgrading of infrastructure services based on the priority requirements of the city at that time. As this project was the first IDA-supported project of its kind in Ethiopia, the physical design of the schemes, which were being developed by the implementing agencies, evolved during the early years of implementation, taking into consideration materials availability and local practices. While it was always expected that new houses would be developed utilising self-help techniques, it was not originally envisioned that construction would be carried out exclusively by housing co-operatives, a Government policy which turned out to be highly successful.

Given the limited experience of the Government in implementing sites and services and upgrading programs in the past, the scope and scale of the project were considered appropriate. The project was timely in that it was launched when Government was beginning to evaluate the impact of nationalisation policies of urban land and rental houses and was considered a useful demonstration of a public-private partnership in housing development, employing cost recovery of the services provided thereby reducing the burden on the Government's budget.

Ministry of Urban Development, Housing and Construction (MUDHC) was to be the key implementing agency for the project, responsible for design and construction of all physical works, except maintenance and community facilities, which were to be the responsibility of the Addis Ababa Administration Region (AAAR). For its purpose, MUDHC established on a temporary basis a project implementation unit, the Urban Development Project Office (UDPO). However, as AAAR was responsible for development programmes in the capital, it was questionable why responsibility for design and implementation of the sites and services and upgrading projects was vested in a temporary office under MUDHC created solely for the purposes of the project rather than in AAAR. These overlapping roles later lead to confusion and a less than satisfactory working relationship between the two agencies. Although this arrangement did not hamper physical implementation, which was largely carried out by contractors, it did create difficulties in record keeping, confusion with regard to the financial obligations which were to be absorbed by AAAR upon transfer of the assets created, and Institutional rivalry.

### **Design Stage**

The services performed by the Ministry of Urban Development and Housing Construction consisted of the design up to tender documentation work in which the design was executed based on the pre design data. The design service generally covers architectural and engineering aspects of the project and took into account

- The data in pre-design stage
- Appropriate design standards and codes
- Municipal and other Public body requirements
- Environmental aspects and
- The best methods of incorporating materials available in the project location

The services provided by the design office of the Ministry were s follows:

### **Survey and Scheme Design**

Survey: The Topographical survey was carried out with a contour interval of 1metre and included location availability of services like electric power, water, drainage system, telephone lines etc.

Scheme design: The scheme design was presented in a sketch form in scale 1:2000, 1:0000, 1:500 and 1:200 and generally covered

- site arrangement
- volume of buildings
- relative location with the overall area in 1:2000 scale
- proposed connection to services like power, water, drainage, telephone etc.
- guiding cost estimate
- preliminary soil investigation programme which showed position and number of trial test pits.

### **Preliminary Design**

The preliminary design extends the concept of documentation. The design team leader coordinates the efforts of architects and engineers from different disciplines. The disciplines were:

#### *Architectural*

The site layout was designed to minimise public land and infrastructure investment per area served and to maximise individual responsibility. Lots were arranged in lateral blocks with wet cores at the back of the building. This type of configuration is the most economical in terms of infrastructure like water supply and sewerage system.

- Site plan was arranged in 1:500 scale showing the location and size of buildings and facilities with measure dimensions.
- building and facilities with a proposal for future extensions
- communications with site, parking, drive ways, pedestrian ways, and paved and green areas.
- site profile which included access, water supply, drainage and power supply.
- site profile which showed the extent of cut and fill
- floor plans, elevations and sections in scale 1:50 and 1:100
- room occupancy and furnishing
- floor and surrounding levels
- building materials to be used for the construction.

#### *Engineering*

- detail soil test programme with laboratory test results and recommendation for the footing type and depth of foundation.
- structural layout in 1:100 showing major sizes and dimensions of structure
- water supply and drainage scheme
- power distribution network, level of illumination and fixture and fitting standards.

### **Design Report and Proposal of Cost Estimate**

The design report covered justification for using the proposed materials, the site and building layout. The provisional cost estimate was calculated on floor area basis. After the approval of the preliminary design by MUDHC the detail design work started.

### **Final Design**

The basis of the final design was the preliminary design and comments received there on and the soil investigation report.

#### *Architectural, Structural, Sanitary and Electrical*

Drawings were prepared in scale of:

- Site plan to scale of 1:500
- Floor plan to scales of 1:100 and 1:50
- Section to sale 1:50
- Elevation to scale 1:50 and 1:100
- Special drawings and schedules for doors, windows and stairs

*Design Reports*

Each of the above activities was supported by design reports. Based on the final design documents the Engineer prepare the draft tender document and engineer's estimate which contained the following:

- The texts of the invitation to bid, instructions to bidder, bid proposal and condition of contract.
- The technical specifications and methods of measurement prepared in conformity with the requirements of standard and project requirements.
- The detailed bill of quantities prepared trades of work and enabling measurement of unit rate determination. All documents were prepared on the bases of applicable proclamations and guidelines of the country.

**Construction Stage**

Civil works components of the project, consisting of preparation and servicing of lots, construction of units, access roads and septic tanks were procured through competitive bidding in accordance with the Ministry's guidelines.

The contracts were awarded as a result of competitive bidding between firms selected on the basis of their suitability for the project.

The documents comprising of the drawings; specification and instructions to bidders were sold to the competitive bidders. The instructions to bidders provided details of the date, place method for the return of bids, which must be delivered in wax sealed envelope.

When the due date arrived, the bids were opened, checked for arithmetical accuracy and subjected to the process of evaluation. The winning tender was generally the lowest evaluated responsive bidder.

The contract document was measured -and-value and comprised of

- The agreement
- Letter of Appointment
- The tender proposal of the contract
- Drawings
- Technical Specification & Methods of Measurement
- Bill of Quantities
- Standard Conditions of Contract for Construction of Civil Works Project
- Appendix to construction agreement clauses and
- The Schedules and the time for completion of the works.
- The value of the bond which the contractor may be required to arrange through a bank or insurance company to guarantee performance of the contract and which he would forfeit to the employer in the event of the construction's failure
- The liquidated damage payable to the employer for each day of delay in completing the project.

The prepared contract document represents the agreement between the housing co-operative association and the contractor

*Organisation and Management*

The housing association chose to engage professional assistance, which played the role of the Engineer on a short-term contract for the supervision of the project.

*The duties and power of the Engineer*

- approval of the contractor's programme and his proposed method of working;
- acceptance of workmanship and approval of quality of material;
- approval of measures to deal with problems such as unforeseen physical conditions or slow progress
- the issue of certificates accepting the works as substantially complete and accepting the satisfactory completion of the maintenance period
- the application of test of satisfaction as the standard of compliance for all matters pertaining to the contract;
- explanation and adjustment of ambiguities , discrepancies ,errors and omission in the contract documents;
- assessment of whether physical conditions or artificial obstructions were unforeseen;
- assessment of delays and evaluation of extra costs incurred by the contractor;
- allocation of liability for damage to the works;
- assessment of the rate of progress against completion date;
- assessment of any extension to the contract period;
- measurement and evaluation of the works for interim payment and final account;

- evaluation of whether and how contract rates should be varied to take into account changes in the works;
- adjudication in disputes between employer and contractor;
- issuing of variation orders to supplement delete or modify any part of the works;
- the suspension of works due to weather, default of the contractor, safety reasons or the presence of unforeseen physical conditions or critical obstructions;
- the removal of improper work material;
- the direction of the contractor regarding the use of provisional or prime cost items in the bill of quantities and the employment of a nominated sub-contractor;
- the direction of the contractor regarding the keeping and maintenance of particular contemporary records in connection with any claim

The resident engineer and the contractor were working towards the same end i.e. the satisfactory completion of the project. Inevitably there were disagreement over the means by which the shared goal was to be achieved, but the relationship remained professionally correct. This was the final at which site decisions were made and disputes settled. The most valuable contribution to the success of the contract which the Engineer's and the contractor's head offices can make was to ensure that, wherever possible, site decisions were kept at site level.

There was occasion when it was reasonable to take a flexible attitude to the specification of the contract document, but decision of its kind were reached through a thorough knowledge of all the relevant facts certain amount of prediction, a large measure of engineering judgement and a sound understanding tactics of the contract as a whole.

The contractor's staff had direct request for information or approval of completed works to the appropriate member of the resident engineer's team, by leaving a clear message. Throughout the construction period meetings were held, every week between the contractor and the engineer and every month between the client, the contractor and the engineer.

The construction processes were closely monitored with constant check on the contractor materials and workmanship. In every case the resident engineers assessed whether the contractors had complied with the requirements of specifications or, if there was no detailed statement the method or performance, with the accepted standards of good practice.

*Project Risks:* Of the potential risks identified at appraisal, only the building materials shortage proved to have significant consequences.

*Project Objective:* The project is viewed as being successful in meeting its principal objective of implementing a new, more resource efficient housing policy based on modest standards, self-help and individual initiative. Recovery of appropriate development and housing costs of the sites and services component is currently in process, which will permit replicability of the scheme and ease the burden on public finances.

Housing & Saving Bank (HSB) was assisted in its professional and financial development which helped it to smoothly implement the housing construction loan component. Access roads, drainage, water supply and environmental conditions in the project area were set according to the initial plan. Rental housing Policies were reviewed and Government subsequently approved a policy of divestiture of rental houses in order to reduce rent subsidies and increase the incentives for maintenance.

Implementation of the divestiture policy had not started when the project was closed.

Road maintenance and sanitation policies and practices were additionally reviewed and a program of assistance in these areas has been included in the follow-on urban project.

The two other urban institutions, MUDHC and AAAR, were also strengthened in a number of areas, and this is expected to improve their respective abilities to successfully implement the follow-on projects.

## **Physical Results**

The physical target of the project was achieved substantially as planned and in several cases, even surpassed. The implementation results are shown below.

### *Variance between appraisal and actual results*

The major changes in project design implementation were:

*Residential development* - the number of residential plots developed by project-1 were substantially higher 37% than planned due to

- (1) inclusion of plots that had been originally earmarked for future development of middle/higher income uses along the main access ways but which were incorporated during this Phase to provide a more balanced community in terms of income groups and house types and
- (2) addition of plots on the slope at the edge of the development, which previously were judged difficult to be, accommodated due to the terrain. Also adjustments were made in plot sizes and numbers of commercial and industrial plots in response to demand, resulting in a smaller number of generally larger plots.

### **Project Sustainability**

The project has proved sustainable as evidenced by the excellent mortgage loan repayment maintained by project beneficiaries. AAAR efforts to maintain infrastructure services have not kept up with need but their capacity is being strengthened under a follow-up urban project being financed by IDA. The replicability of the project approach has been demonstrated in at least one other donor-financed project currently under implementation.

### **Bank Performance**

Under the project, the Bank made a positive contribution to the development of shelter policies in Ethiopia through the demonstration of more appropriate approaches to addressing the serious shortage of housing and municipal services. The Bank has also provided sound advice aimed at supporting the institutional development of key urban service delivery and credit agencies.

The Bank's performance during the project cycle was generally satisfactory, although the assistance provided during the preparation stages of the project was unusually heavy in terms of staff time and costs and frequency of visits. While this is partly explained by the suspension of lending activities to Ethiopia over compensation issues, the primary reason was the Bank's own involvement in project design rather than requiring Government to retain a full-time design consultant to work with the implementing agencies, which were inexperienced in preparing these types of project components. In the end, the project was designed in an interactive manner by the implementing agencies with guidance and advice provided by visiting Bank mission, which proved to be very costly and time consuming.

### **Borrower Performance**

The Borrower's performance during the project cycle was generally very good, particularly during implementation, which proceeded smoothly by repaying the loan as per the contract. The establishment of a co-ordinating committee consisting of senior officials of all implementing and utility agencies, which met regularly to discuss, project issues, contributed to this exceptional performance.

All implementing agencies carried out their respective responsibilities well.

Some problems were experienced during the upgrading of infrastructure at project-2 due to poor co-ordination with the Addis Ababa & Water Sewerage Authority (AWSA). The road maintenance and reconstruction works were undertaken without prior consultation with AWSA and consequently existing mains were something damaged, with the result that some residents were deprived of water service which was intended to be upgraded. Repairs to the mains interrupted the road works, but in some instance the road contractor carried on regardless of these. The follow-on projects of preparation to ensure proper co-ordination, acceptability of designs and proper phasing of improvements in the future.

As mentioned previously, MUDHC, through UDPO, was the key implementing agency for the project. In this project, UDPO was strengthened during implementation, but due to the temporary nature of the office and the uncertainty of future work, many of its staffs resigned when the project was nearing completion, thereby, losing a valuable experience. The follow-on project in Addis Ababa is being carried out by municipality staff, and this should consolidate the region's capacity for urban development.

### **Managing Properties**

The caretaking and maintenance of the roads, sewerage and water line system lies in the hands of the Addis Ababa Municipality. Due to budget constraints and unstable structural

system the work is rarely performed as planned. Maintenance of houses is conducted by the dwellers irregularly.

### **Project Documentation and Data**

The original documentation for the project was adequate, providing a useful framework for both the Bank staff and the Borrower during implementation. Good recordkeeping by project agencies were facilitated by UDPO.

### **Finding and Lessons**

The principal lessons learned include the following:

- a) Community participation in project planning, design and management was a key ingredient to the overall success of the project. Sensitive community organisation efforts mounted by the project unit resulted in the formation of cohesive and housing co-operative whose self-help efforts were responsible for the efficient construction of low-income dwellings for owner occupation.
- b) A central aspect of the effective community organisation which characterised the project was the process of group formation based on the workplace, i.e., housing co-operative were formed on the basis of groups working for the same employer. This facilitated, inter alia, the release of workers from their jobs thus improving the co-ordination of mutual self-help construction activities.
- c) Project implementation was scheduled in such a way as to delay the completion of road construction until most of the house construction was completed. This meant that remedial works to the road network needed to repair damage caused by the movement of heavy construction vehicle and equipment were minimised;
- d) The establishment of special project implementation units outside the agencies normally responsible for municipal services and shelter development should be avoided if any long term institutional development is to take place. A follow-up urban project in Addis Ababa was implemented directly by the City Administration while the project unit set up under this project was given the responsibility to implement a project at selected market towns;
- e) The nationalisation of housing stock and the policy of rent control by the Government led to both the diminution and the deterioration of the existing housing stock owing to lack of incentives for maintenance. The Government revised its rental housing policy and adopted an approach to give back the nationalised housing stock to the private sector. However, implementation of the policy change had to be made into a condition of disbursement under the follow-on project.

Similar types of projects were constructed in three different locations of the City. Due to improper co-ordination between the housing co-operative and the city administration the roads and the drainage systems are in poor condition. Thus proper co-ordination between the concerned offices is necessary. After the final acceptance of the project floor plans and faced of the buildings were modified by the dwellers. This shows the participation of the housing co-operative and the MUDHC was not satisfactory. See pictures below.

### **Project Review from Borrower's Perspective**

The approach and methodology employed, that is, self-help housing scheme on serviced site proved to be appropriate to enable the urban poor (80% of the total urban population) whose monthly income is less than Birr 250 construct their dwellings. The upgrading scheme that was meant to address the urban poor was successful in the construction and improvement of roads and drainage. Establishment of independent and autonomous project implementing office with efficient operational and institutional procedure proved pertinent in the undertaking of the Urban Program. The felt needs of society expressed in the objective of the project promoted effective participation by beneficiaries that accelerated the success of the project. In the course of project implementation it was found prudent to produce major building items based on cost benefit analysis and procurement of building materials and equipment that are not domestically available. To preserve the achievement of the project it is essential to prepare beneficiaries to take over the development endeavours after the termination of the project office.

The project has demonstrational and experimental character that would enable the Government to establish new programmes suited to the needs and capacities of low-income population.



## Statistical Information

### Project Implementation

	<i>Planned</i>	<i>Actual</i>
Land Area (hectare)	130	130
Residential Plots/Houses	2300	3150
Of which: Low –Income	1610	2025
Middle/ High- Income	690	1125
Residential/Commercial Plots	400	160
Industrial Plots	250	161
Total	950	3471
Roads and Drainage (Km)	6.9	17.4
Communal Water Standpipes (points)	70	56
Families previously living on site which was incorporated into the site plan	800	1100
Households resettled within project area	59	122
House Construction Loans (Birr 00) Project 1	15,808	33,679

Area of G+1 70m<sup>2</sup>  
 Cost per m<sup>2</sup> 520 Birr  
 Filler material brick  
 Area of core+1 38.5m<sup>2</sup>  
 Cost per m<sup>2</sup> 117.5 Birr  
 Filler material hollow concrete block  
 Rate of Return 17.9% (year 2003)  
 Land costs include compensation  
 On-site infrastructure costs allocated to the project  
 No portion of off-site infrastructure costs allocated to the project  
 Overhead includes cost of administration scheme  
 O&M assumed to be 2% of capital costs  
 Apartment inputted monthly rent 500 Birr

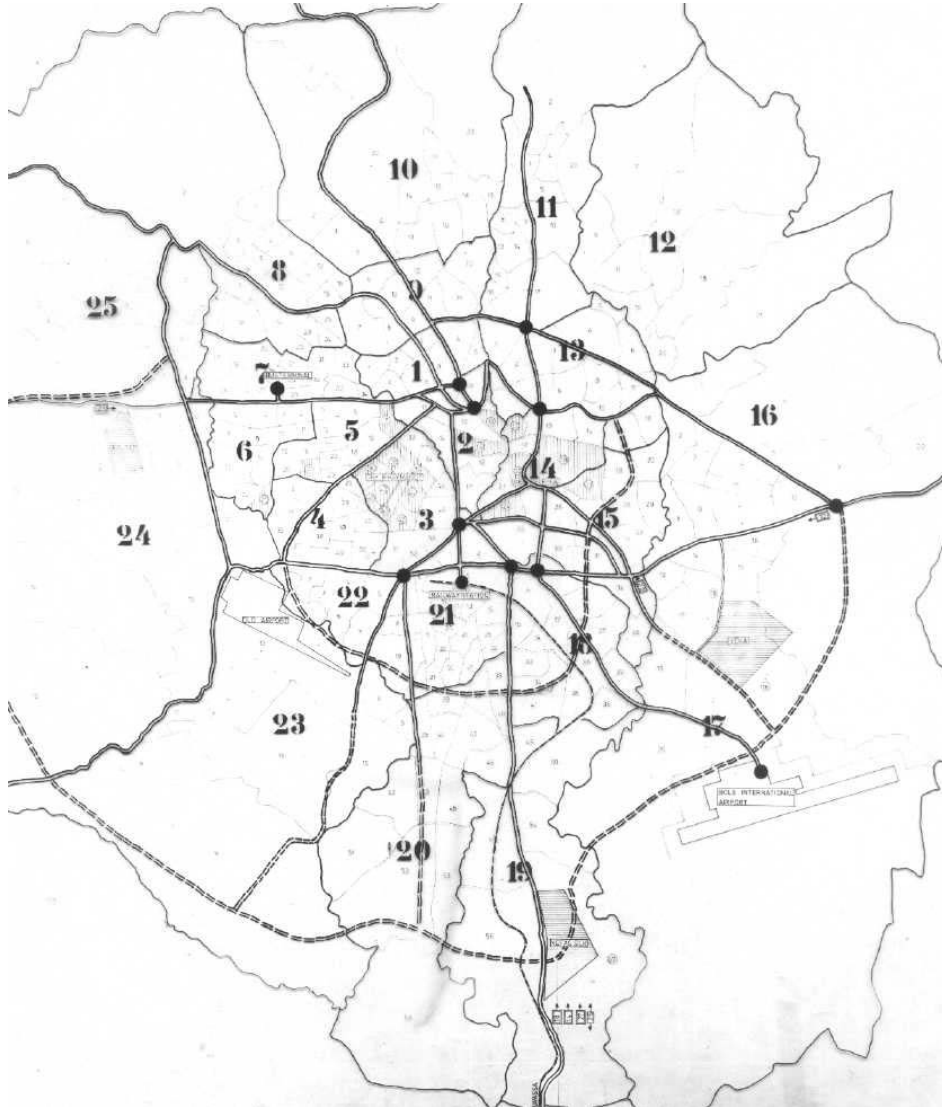
## Conclusions

The proposed Addis Ababa site and service project is the first large-scale attempt by the Government to implement a low-cost solution to the shelter and service needs to the urban population. Rapid urbanization, the rising cost of urban land and housing and the continuous decline in purchasing power of wide sectors of the population contribute to the alarming housing shortage. Although housing has specific characteristics, it is not isolated from other problems inherent in the society as a whole.

International aid organisation like the World Bank has played an important role in the design and implementation of housing policies and the development of the housing sector. The project was expected to have substantial influence on the Government's approach to urban shelter and infrastructure for lower and middle-income group. Community participation in project planning, design, and management are the key ingredient to the overall success of the project. A co-orientated action by all the concerned parties can solve housing and infrastructure deficiencies, creates institutional strengthening and employment opportunities.

## References

World Bank and UDSS documents



*Addis Ababa City Plan*



Site Plan of Project-1



Building project with incomplete infrastructure in Bole area



*Building project with incomplete infrastructure in Bole Area*



*Modification of facade from the original design*



*Incomplete road and drainage system*



*Buildings under construction stage*