

## Facility and demand to housing development at Jemo 1 area, Addis Ababa, Ethiopia

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Sustainable  
Condominium

Development  
Infrastructure

Livability

### 1. Back ground

Ethiopia is a land locked country that covers 1.1 million sq. km area. It is the second populated country in Africa with 102,000,000 inhabitants. The country is administratively divided into nine national regional states. 80 percent of the population live in rural area and the country's economy is agriculture-based. About 4 million people live in the capital city Addis Ababa, which was established 130 years ago.

The Derg government in 1975 nationalized the land and extra houses and established two new types of housing sector; government-owned rental units and Kebele Housing, managed respectively by administration units and kebele. The low rental rates resulted in little or no investment in housing, which led to a further deterioration of housing quality. The housing conditions were poorest in the center of Addis Ababa. In order to improve the slam environment, Integrated Housing Development Plan (IHDP) was introduced in 2005 and designed by the German Technical Cooperation (GTZ) Ethiopia.

IHPD planned to construct 400,000 condominium units.. The case study area, Jemo 1, is the largest of the condominium housing development projects. The aim of this paper is to examine the availability of sufficient infrastructures and to analyze the sustainability and livability of the area based on the Sustainable Development Goals of the United Nations (SDGs). For the study the integration of infrastructures in the design and implementation of the area is inspected.

Both primary and secondary data are used. Site investigation, design analysis, interviews and inquiries are collected from the residents and the public officials. In addition various literature sources are reviewed.

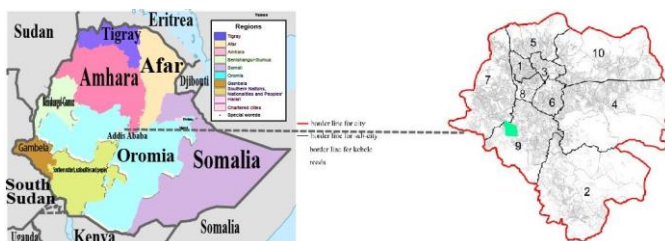


Fig1 Ethiopia and Addis Ababa

### 2. Design of Jemo 1

The Jemo1 condominium site is located in Addis Ababa. The case study area was farm land ten years ago, but due to the government's plan of Urban Sprawl and National Urban Development Policy in March 2005, the area was selected as a project site.



Fig. 2 Jemo1 Site Plan

#### Street and Open Space

The main mode of transportation is road. Public bus, mini bus, Bajaj and private cars are used for transportation.

#### Buildings

The condominium houses are four-story buildings made of concrete. The government provides work opportunity for small business to manufacture construction materials like bricks, agro stones and door and window frames.

#### Analysis

The SDGs of UNDP are integrated into the country's Growth and Development Transformation Plan (GTPII). The Ethiopian Housing Construction Authority's site plan of the study area includes infrastructures and services that are listed as seventeen SDGs.

1-No Poverty, 2-Zero Hunger, 3-Good Health and Well-being, 4-Quality Education, 5-Gender Equality, 6-Clean Water and Sanitation, 7-Affordable and Clean Energy, 8-Decent Work and Economic Growth, 9-Industry, 10-Innovation and Infrastructure, 11-Reduced Inequality, 12-Sustainable Cities and Communities, 13-Responsible Consumption and Production, 14-Climatic Action, 14-Life Below Water, 15-Life on Land, 16-Peace and Justice Strong Institution, 17-Partnerships to achieve the Goal.

エチオピア・アジスアベベ・ジェモ第1地区住宅地開発における生活関連施設と住民要求

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Table1:- Land use of Jemo 1

Facilities	Number	Area (ha)
Residential plot	64	42.45
Green Area	27	7.97
Commercial place	25	10.52
Open Market Place	1	1.56
Administration (wereda center)	1	0.19
Kinder Garden	9	2.36
Elementary School	1	1.79
High School	1	2.35
Health Center	3	2.43
Sport Field	2	2.28
Police Station	1	0.33
Fire Brigade	1	0.88
Roads		17.59
Total		92.7

The density of the population in the area is 53,000 people per sq. km. By contrast most cities in China and Japan are 6000 residents per sq. km., the most crowded city, Dahak, has 45,000 residents per sq. km.

### 3. Inquiries to Public office and Residents

From the above listed SDGs, four of them (3-Good Health and Well-being, 4-Quality Education, 10-Innovation and Infrastructure 12-Sustainable Cities, and Communities) are selected to be analyzed. They are selected based on the need of facilities by the residents and the availability of data. Inquiries and datas are prepared based on the importance and availability of infrastructures.

#### Data from Public Office

The data from designing and construction team at the public office shows less availability of recreational centers, sufficient roads and health center sequentially, however, emphasizes their importance.

#### Data from residents living in Jemo1

In the case study area, the data were collected by interviewing and by filling questionnaire as well. In the interview the residents reported that lack of sufficient water, electricity and the high cost of the condominium house rent were the critical problems that they are facing.

The result shows that recreational center, health center and sufficient roads are limited. From the analyzed questioners below, some of the public sector officers, the designing and construction team who has participated in the project of study area, maintain that some infrastructures and service providing entities are not essential whereas the residents believe that the services and facilities are critical for livability and sustainability.

Table2:- Response to Inquires

Facilities	Public Sector			Residents		Total Percentage
	Designers 10 persons	Contractors 8 persons	Percentage	17 persons	Percentage	
Sufficient road						
Necessity	9	8	94%	17	100%	97.00%
Available	9	6	83%	8	47%	65.00%
Kindergarten						
Necessity	10	8	100%	17	100%	100%
Available	10	6	89%	8	47%	68.00%
primary School						
Necessity	10	8	100%	17	100%	100%
Available	10	7	94%	8	47%	71.00%
Secondary School						
Necessity	10	8	100%	17	100%	100%
Available	10	7	94%	8	47%	71.00%
Health center						
Necessity	10	8	100%	17	100%	100%
Available	10	7	94%	3	18%	56.00%
Waste disposal place						
Necessity	10	8	100%	17	100%	100%
Available	8	8	89%	11	65%	77.00%
Recreation center						
Necessity	9	7	83%	17	100%	92.00%
Available	7	6	72%	2	18%	42.00%
Green area						
Necessity	10	8	100%	17	100%	100%
Available	10	7	94%	7	41%	68.00%

### 4. Conclusion

The government-led affordable housing development promotes homeownership for low-income households and improves lifestyles. However service providing entities and infrastructures are very low comparing to the density of the population. As discussed above, the lack of health center, school, transportation, public space and others are affecting the social, economic and environmental sustainability of the area. The problem causes less desirability to live in the place by the residents. To this end, this paper shows, despite the articulated design, proper implementation and social integration for sustainable development is vigorous.

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