



8-2007

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Bayrau, Alebel and Bekele, Genanew, "Households' Willingness to Resettle and Preference to Forms of Compensation for Improving Slum Areas in Addis Ababa City" (2007). *International Conference on African Development Archives*. Paper 120.
http://scholarworks.wmich.edu/africancenter_icad_archive/120

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Households' Willingness to Resettle and Preference to Forms of Compensation for Improving Slum Areas in Addis Ababa City

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Submitted to

The Fourth International Conference on Ethiopian Development Studies (4th ICEDS) on THE CHALLENGES AND OPPORTUNITIES FOR PEACE & DEVELOPMENT IN ETHIOPIA & THE HORN OF AFRICA, August 2-4, 2007, 2000 Schneider Hall, Haworth College of Business, Western Michigan University, Kalamazoo, USA

Acknowledgment

The researchers owe a great debt to the Organization for Social Science Research in Eastern and Southern Africa (OSSREA) for the financial support of this research project. We are also indebted to all those who assisted us directly or indirectly to the accomplishment of the research.

April, 2007a

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Abstract

The spatial, physical and socio-economic condition of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the City population. The limitations of its current developmental trend and the depth of the existing environmental problems, coupled with the requirements of the projected population of more than 3.5 million people by the year 2010, entail reexamination of constraints and opportunities with the aim of devising appropriate measures and strategies for action. The suggested government intervention strategies, as stated in the report by ORAAMP, include: Relocation and resettlement of residents for efficient utilization of potential sites (basically slum areas) and resources, among others.

The suggested relocation and resettlement programs in Addis Ababa, as the literature on urban resettlement dictates can be unavoidable as it can be beneficial and the society, as a whole, can be better off through improved environment and increase opportunities of income and employment that can be realized by involving the private sector and mobilize the potential land value. However, it requires establishment of a policy and guiding framework, which are necessary to create an enabling environment for rehabilitation of resettles. The resettlement practice in the City has been happening in the absence of any policy document, planning framework and assessment of need of the resettles. Consequently, compensation among the resettlement programs so far undertaken in the City lacks uniformity in type and magnitude. And the compensation mechanism basically fails to consider the needs of the people being resettled. Hence, the question is how to respond effectively to the needs of the people being resettled, how they can be compensated to move voluntarily and how to minimize the magnitude of adverse effect of the resettlement program. And a resettlement without the assessment of these questions is more likely than not to affect decisions made at the expense of the low-income communities who do not have the negotiation means of power, suggesting the need for a better understanding of the possible result that can be achieved by undertaking planned resettlement programs in the slum areas of the City.

In the light of the above arguments, this study will attempt to answer the following questions: Will households be willing to resettle from slum areas of the city? What forms of compensation do households prefer to be compensated? What factors (including environmental, demographic, cultural and socio-economic factors, etc.) determine households' willingness to resettle and preference to forms of compensation? What is the relative strength of resettles' consideration regarding environmental and economic factors in their decision to resettle? The general objective of the study is, therefore, to analyze households' willingness to resettle by taking Addis Ababa as a case. Specifically, it will examine the willingness of households residing in the slum area of the city to resettle and examine the determinants of households' willingness to resettle and preferences to forms of compensation.

The study employed contingent valuation method to solicit the respondents' willingness to resettle. We used a Probit model to estimate a household's probability of deciding to move to the resettlement area. Multinomial logit model is used in order to estimate and analyze the determinants of a household's preference to different forms of compensation. The study shows that resettlement is a possible option to improve the socioeconomic and physical condition of the city since households are willing to move to other area if the compensation enables them to restore the existing situation. However, the socioeconomic, demographic, local institutions (such as "Edir" and Ekub") and environmental characteristics of the displaced people should be taken in to consideration. This requires formulating policies and guidelines that fundamentally aim at least to restore the current standard of living of the resettle.

1. Introduction

1.1. Problem Statement

Ethiopia is currently facing several social and economic problems. Its cities are confronted mainly with extensive poverty which is characterized, among others, by environmental problems and underdevelopment of physical infrastructures. Addis Ababa, the capital city of Ethiopia and head quarter for African Union, accounts for one third of the country's urban population. The city is experiencing multiple socio-economic and environmental challenges to be addressed, one of which being the provision for a decent life to its residents. Its existing built-up area is characterized by dilapidated structures, congestion, environmental related problems and poor urban image, shortage of and low quality infrastructure, basic services and inefficiencies in land utilization.

According to studies by the Office for the Revision of the Addis Ababa Master Plan (ORAAMP), an estimated 60 percent of the city core is dilapidated, and about a quarter of all housing units have been built illegally and informally. Shortage of housing is acute especially for low-income households that account for over 80 percent of the city's population. Overcrowding and deterioration of housing are commonplace in the city. As indicated in a study by the Addis Ababa Water Supply Agency, 82 percent of the population in the city lives in unplanned, high density and low standard housings, 30 percent and 20 percent of which lack waste water and kitchen facilities, respectively. Another study by the National Urban Planning Institute (NUPI) indicates that a substantial proportion of the housing stock in the city is considered to require upgrading, while about 15 percent is beyond any kind of repair.

In addition to aggravating environmental problems of the city, the lack of service provision exacerbates the already poor living and working conditions. ORAAMP reported that only less than 65 percent of the reachable solid waste generated in the city is collected, the remaining being simply dumped in open sites, drainage channels, rivers and valleys as well as on streets. About 67 percent of the people in the city use dry pit latrine and 42 percent of the existing public latrine facilities are used by 4 to 9 households and are characterized by overflows. Rivers and streams have also become open sewers where households' liquid

wastes, industrially toxic and hazardous effluents are discharged without being treated, hence, negatively affecting animals and people living along the valleys. The existing sewerage system is serving only about 15 percent of the City's population. Likewise, over 25 percent of the residents are without any kind of sanitation facilities whereby even the existing latrines are not emptied on time. This glaring shortcomings, coupled with low water consumption (30 lt/day/ person) plus the ever increasing vehicular traffic, posing severe air pollution and noisy conditions; have aggravated the sanitation problems of the City. National figures show that these problems are leading causes of acute respiratory infectious, skin and parasitic diseases, resulting in mortality and morbidity. Flooding also has had great impact on people who have settled in vulnerable areas of the city. In 1987, 108 Kebeles (out of 289) and in 1994, 7,655 people were affected in death and loss of houses, among others (Tewodros and Zeleke, 2001).

There is a marked gap between the demand for basic services and the supply of those amenities by the City Administration to keep pace with the expectations emanating from the scale of change the City undergoes. ORAAMP indicates that basic services (like telecommunication, media, roads, hotels, education and health) and such facilities as recreational centers in Addis Ababa hardly meet the standards provided by other competitive African cities. Addis Ababa has increasingly been expanding haphazardly and horizontally along the five regional outlets. This experience, however, gives little concern for sustainable expansion possibilities and only adds inefficiency in land utilization.

In general, Addis Ababa City is characterized by deteriorating environmental conditions and limited economic development. The spatial, physical and socio-economic condition of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the City population. The City is faced with many challenges and it requires embarking on sustainable development efforts -actions that brings development reinforced by protection of the environment. The limitations of its current developmental trend and the depth of the existing environmental problems, coupled with the requirements of the projected population of about 3.8 million people by the year 2010, entail reexamination of constraints and opportunities with the aim of devising appropriate measures and strategies

for action. The suggested government intervention strategies, as stated in the Addis Ababa City Development Plan 2001-2010, include relocation and resettlement of residents for efficient utilization of potential sites (basically slum areas) and resources; and bringing balanced and coordinated investment/ development in different parts of the City, among others.

The suggested relocation and resettlement programs in Addis Ababa, as the literature on urban resettlement dictates (see for instance World Bank review, 1994; Cernea, 1989; and Asian Development Bank, 1995), can be unavoidable as it can be beneficial and the society, as a whole, can be better off through improved environment and increase opportunities of income and employment that can be realized by involving the private sector and mobilize the potential land value. However, it requires establishment of a policy and guiding framework, which are the necessary preconditions suggested by the literature, to create an enabling environment for rehabilitation of resettles.

The resettlement practice in the City has been happening in the absence of documented policy, planning framework and assessment of need of the resettles. Consequently, compensation among the resettlement programs so far undertaken in the City lacks uniformity both in type and magnitude. And the compensation mechanism basically fails to consider the needs of the people being resettled (Elizabeth, 1996). Hence, the question is how to respond effectively to the needs of the people being resettled, how they can be compensated to move voluntarily and how to minimize the magnitude of adverse effect of the resettlement programs. Resettlement without the assessment of this question is more likely than not to affect decisions made at the expense of the low-income communities who do not have the negotiation means of power. This suggests the need for a better understanding of the possible result that can be achieved by undertaking planned resettlement programs in the slum areas of the City¹.

1.2. Research Question

This study will attempt to answer the following questions:

- Will households be willing to resettle?

- What form of compensation do households need?
- How much do households need to be compensated to resettle?
- What factors (including environmental, demographic, cultural and socio-economic factors, etc.) determine households' willingness to resettle?
- What factors determine resettles' preferences to forms of compensation?

1.3. Objectives of the Study

The general objective of the study is, therefore, to analyze households' willingness to resettle by taking Addis Ababa as a case. Specifically, it will examine:

- the willingness of households residing in the slum area of the city to resettle and
- the determinants of households' willingness to resettle and forms of compensation.

1.4. Hypothesis of the study

The main hypotheses of this study are:

- Households living in the slum areas of the city are willing to move voluntarily given that they are compensated in accordance with their own preferences;
- Given that other factors being constant, residents of the study area are not against the option of relocation program designed by the municipality to improve the physical, social and environmental problems of the city
- Households consider environmental, social factors in their decision to resettle;
- Monthly income of a household living in rented house preferred 'house to own' over 'house to rent' if they are given the chance to own since they are economically capable; and
- Households who have strong social interaction with neighborhood are less likely to prefer 'house to own' over 'house to rent' since they do not want to loss the social value they have in the current neighborhood.

1.5. Significance of the study

We believe that the study may help decision makers in developing a win-win strategy in achieving economic growth and improved urban development as well as in verifying the possibility for wider applicability of planned resettlement as a potential policy option to

improve the environmental condition of urban areas in the country. It can also be considered as an addition to the limited literature available on planned resettlement issues in the country

1.6. Scope of the Study

While resettlement programs are related to demand and supply sides of different issues including policy, institutional and organizational aspects, this study focuses on analyzing the willingness to resettle of households residing in slum areas of Addis Ababa. Specifically, the study includes households residing in areas where the Addis Ababa City Administration has already developed Local Development Plan for the next ten years including Merkato, Piassa, Haile G/selaaisie Avenue, Megenagna Minor Center, Meri Luke Center, Meri Luke Residence, Lafto, Casanchise, Cherchill Road and Sengatera.

2. Resettlement Experience in Addis Ababa City

There are some resettlement experiences in Addis Ababa City though they were made without any policy and guidelines². It is hardly possible to find policy and guidelines for management of resettlement though one can mention some legal or constitutional issues. During the emperor period, when resettlement or dispossession of houses/ plot of lands was made for government development or other purpose, compensation was made both in the form of cash and in kind in accordance with the then compensation law. The law states that the amount to be compensated was first determined by the individuals who supposed to be compensated. If the payer does not agree with the proposed amount, a committee will be established that look in to the issues. If the two parties did not agree, the final decision was made by a judicial court, and the decision made by the court is binding for both parties.

Whereas, during the Derg regime, a commission was established based on a proclamation number 70/68. The major duty of the commission was to see cases on the 'dispossessed houses' from individuals or any party. It was the commission that made any decision regarding compensation. The commission made decision on the amount of compensation based on the engineering estimation of the house. Besides, it also takes in to account whether the house is free of any legal case. In some cases the political ideology of the

owner of the house was also considered for decision. The objective was mainly to minimize the amount of compensation. After the down fall of the Derg in 1991, the commission was replaced by 'compensation paying survey and negotiation' department with in the ministry of Finance. Amount of compensation was determined by the office for government house selling. Type of building, standard of house, floor width, price for meter square and existing physical condition of the house were considered in estimating the compensation amount (See Appendix 3 for proclamation made on compensation in different periods).

Since the down fall of the Derg regime in 1991 there have been some resettlement programs that have been taken place in Addis Ababa city. Leaving aside some of the publicly unknown small-scale resettlement, some resettlement programs were took place both by private and government investment programs. These include, among others, the "Al-Tad Sheraton Hotel", " the Addis Ababa Ring Road", "Yemeru building complex projects", "the Addis Ababa Airport expansion project" and 'Dire dam water supply project'. The Al-tad and Yemiru projects are private investment projects and the rest are government's investment projects.

Based on the available information, total numbers of households that have been expected to resettle are 568 from the three projects. This figure does not include number of households displaced due to the Addis Ababa international airport expansion project and the Dire dam water supply project. Table1 (see Appendices) shows number of resettled households from three projects. These resettlement programs took place with out any policy Framework. Due to the absence of policy framework, it is believed that the resettlement program affected some resettled households and some economic growth opportunities have been lost for the city. Decisions were made with out consulting the resettlee and it was at the expense of the community who lack the negotiating skill and power. Moreover, due to the absence of policy framework and guidelines, the resettlements made due to these different programs lack uniformity in type and magnitude of compensation. In case of ring road, most of the decisions about where and when to resettle the households and form of compensation were made by a committee formed by the regional government. This project has resettled only the project-affected households with private ownership of housing and/or land in 1994/5.

Land for Land and cash for the demolished property value were the form of compensation. A maximum of 250m² plot of land was given to all resettlee regardless of the land size they had before the resettlement. Government house renters affected by the project were not resettled. Instead, they have been given Birr1200 to rent house for one year and priority have been given to rent another government house when it is available. In 1998, another resettlement was made due to ring road project. Compensation for house owner was similar to the previous one but for government house renter, the government constructed houses with all-side tin. Those with business houses were not given any form of compensation.

Secondary data on the process of management in the Al-Tad resettlement program indicated that there has been some kind of awareness creation and community participation through different meetings with one of the major shareholder called "*Tadele*". It is noted that the resettlee were being involved in the process of site selection and design and monitoring of the construction. Based on their preference, which was to resettle in-group, the communities resettled about 8kms from the city center. However, this had some shortcomings in that the committee members were pursuing their own interest rather than those of the community. Thus, this program was prepared and designed mainly by the private sector with limited participation of the resettlee. The form of compensation made in A1-Tad resettlement program was house for house regardless of ownership and with the same number of room. And basic facilities such as private water, electricity, kitchen and latrine were also provided. It is believed that there is some kind of improvement in terms of the construction material for the house, number of rooms and access to facilities, planned with paved access roads and in neighborhood environment. Regular transportation service has been given up on payment of 25 cents as well as some additional class rooms were constructed in the near by school so as to accommodate the children of the resettlee. Other services such as health center, grinding mills and meeting halls have been constructed by the project. Due to these, the resettlement program is considered as luxurious compared to the deteriorated housing conditions existed before the resettlement.

Generally speaking, there was no any kind of community participation in *Yemeru's* resettlement program. The same conditions as the ring roads resettlement program were

existed in dealing the issue with the individual households in *Yemeru's* program. The resettles were not even aware of the program. According to study made by Elizabeth who made an interview with the resettlee, there was lack of communication with the project owner, and the resettlee had a chance to see the owner only twice and communication was only with one of his employee. In terms of community participation, this program was considered as the worst. The form of compensation was house for house. Yemeru's resettlement program is unique from other resettlement program in the city in that residential resettles and business households were treated differently. The resettlement program was made based on the principle of exactly replacing the pre-resettlement housing with the exception of its construction materials. No other basic services were provided other than those existed before the resettlement program. Neither cash nor disturbance compensation was given in this resettlement program (Elizabeth, 1996).

Though full data could not be obtained, resettlements were also made due to the Addis Ababa City expansion project, Civil Aviation expansion project and construction of Dire dam water supply projects. For expansion made in Akaki area, form of compensation for the resettled farmers was only 11.25 cents per Meter Square. This compensation did not consider other properties of farmers such as cost of house construction, livestock and livestock products, eucalyptus trees and other gardening. For resettled households from the civil aviation expansion project, unlike the Akaki's project, compensation was made for house construction including 250 square meters per household and some training about resettlement. The resettlement program made in the north part of the city due to the 'Dire dam water supply project' was relatively better than the other. The resettles were given, among other compensations, Birr6 per Meter Square, 250 square meter land per household and Birr2000 per household for disturbances.

3. Literature review

3.1. Valuation methods

According to Mitchell and Carson (1989), goods for which ordinary market does not exist and their price determined arbitrarily, or provided freely, are considered as public goods. Accordingly, land in Ethiopia is a public good. In literature, we find that there are methods

to value public or non-marketable goods. These include: Hedonic pricing (HP), Travel cost method (TCM) and Contingent valuation method (CVM). Among these, CVM represents the most promising approach yet developed for determining the public's willingness to pay since it is capable of measuring types of benefits that the other methods can't measure.

The theoretical basis of CV is welfare economics, whose theory is related to the basic theory of individual preferences and demand for goods. CVM seeks to make judgments about the desirability of having government undertake particular policies. Policy interest usually lies in the potential benefits as measured from consumers' current or initial level of utility. Hicksian consumer surplus measures are theoretically preferred measures of consumer benefit. In order to calculate the benefits using Hicksian demand curve, it requires correctly estimating the demand function for the improvement of the public goods. However, this task is difficult, at least, due to lack of accurate market data for these goods. Thus, an alternative method to this is to use a hypothetical market model, which is CVM. This method requires the creation of a market scenario that resembles actual market situation for goods and services that does not have ordinary market (Mitchell and Carson, 1989).

CVM uses survey question to elicit consumers' preferences for public goods by finding out what they would be willing to pay (WTP) or willing to accept (WTA) for a change in provision of public goods. That is, it aimed at eliciting consumers' WTP for improvement in public good in dollar amount or level of compensation they would be willing to accept for its deterioration. From the survey data obtained using CVM, not only a maximum WTP data can be generated, which will be used to construct demand curves, but it can also be used to conduct valuation process of the public goods without having to estimate the actual demand curve. The researcher can elicit the respondents' WTP/WTA using either bidding game, open-ended question, payment card or using close ended format. The survey can be administered using an in-person interview, telephone or postal service.

3.2. Empirical works related to household's willingness to resettle

Contingent Valuation Method has extensive application in recent years in evaluating the benefits of public goods. Despite its wider application in valuing public goods such as recreational sites, less empirical research on valuation of urban land has been done using the method. Its use for empirical analysis in relation to resettlement, in particular, is scanty. For instance, the only available work relevant to such analysis in Ethiopia is a research by Elizabeth (1996). Her work assessed the potential role of planned resettlement in housing policy in implementing housing and environmental conditions in Addis Ababa focusing on three resettlement programs: Al-tad, Ring road and Yimeru. The result of the study revealed that resettlement has achieved neighborhood environmental improvement. It has also indicated that planned resettlement has a potential to improve socio economic conditions of affected households and help achieve city level economic growth. And the major recommendation of the study is development of an urban resettlement policy and guideline in order to realize the latent potential and manage the apparently inherent drawbacks of resettlement. The technique of analysis is basically descriptive.

The so far attempt at identifying determinants of willingness to move among the characteristics of the household shows largely insignificant results. And this has limited empirical works in Ethiopia from reaching conclusions on which factors the household considers in its decision to move and the relative strength of its consideration on the different factors. This suggests an area of possible further research.

The international literature on urban resettlement dictates that the need for involuntary resettlement cannot be eliminated and, thus, establishing a policy and guideline framework is a requirement. It also warns that resettlement, as it involves displacing people's established life, is an inherently complex process. Consequently, minimizing magnitude of resettlement and impoverishment prevention are advocated as fundamental policy goals. And the strategy should be to ensure that the affected people are generally at least as well off after resettlement as they would have been without the resettlement. According to the Asian Development Bank (1995), for instance, good resettlement may be beneficial from economic, social, and environmental considerations; and it may also promote more

equitable development. The World Bank position on involuntary resettlement also states, “rejection of all resettlement is unrealistic. In many situations involuntary resettlement is unavoidable; the question is how to minimize its magnitude and how to respond effectively to the needs of the people being resettled” (World Bank Review, 1994). And regarding resettlements in Africa, Cernea (1989) stated, “The need for investments in basic infrastructure services will increase acutely with the continued population growth in megacities. This, in turn, entails intra urban compulsory relocation processes. It is, therefore, predictable that involuntary population displacement become an important issue.” The literature also identified favorable policy and legal frameworks, sufficient financing, able institutions, and local involvement in program design and management as the foundation for successful resettlement. In line with this, the World Bank review on involuntary resettlement (1994) identified three conceptual issues: *Need for infrastructure investment*, *Nature of the resettlement problem*, and *International debate on resettlement*.

Within this conceptual framework, the Bank states its resettlement policy as: “The fundamental goal of the Bank’s policy is to restore the living standards and earning capacities of displaced persons- and, when possible, to improve them”. And experience, according to the Bank review, show that the most important strategy variable for preventing impoverishment in urban resettlement is the restoration of gainful employment or self-employment, access to adequate services and, if possible, improved housing.

This fundamental goal of preventing impoverishment is embodied in Cernea’s risk model that indicates eight recurrent characteristics of resettlement that need to be monitored closely. These are: landlessness, joblessness, homelessness, marginalization, morbidity, food insecurity, loss of access to common properties and social disarticulation.

In general, the literature on recent resettlement experiences indicates that planned resettlement can be used as a development strategy. This research draws heavily from the above thinking in the literature. And it argues that urban resettlement can be planned for as a development project in its own right, in particular, in big low income cities that have unplanned physical development and deteriorated environmental condition. What is most

important, however, is knowledge on the willingness of the resettlee and their determining factors as well as the forms of compensation they need. This resettlement induced development approach is illustrated in the figure 1 (see Appendices).

The mainstay of this study is to weigh up how planned resettlement can achieve environmental improvement and economic growth, (see Alebel and Genanew, 2005b, on how investors/ land developers can actively participate in such development endeavor). Within this framework, the determinants of households' willingness to resettle will be analyzed in the study.

4. Methodology

4.1. Data type and source

Both primary and secondary data have been used for the study. The data used for analyzing households' willingness to resettle and preference to different forms of compensation is mainly primary and cross sectional for the year 2003. The main data source is contingent valuation (CV) method used to solicit the respondents' willingness to move and to state his/her preference to forms of compensation. Relevant documents from the Addis Ababa municipality and Master Plan Office and other relevant documents have been used as secondary sources. The CV survey is administered using a personal interview.

4.2. Sample Design and Procedure

Since the study focuses in areas where the Addis Ababa city administration has already developed local development plan, the data was obtained from a contingent valuation (CV) survey of a random sample of households living in these areas. The areas identified for redevelopment are Merkato, Piassa, Hailegebresillase Avenue, Megenagna, Meru Luke Cente, Meri Luke Residential area, Lafto, Casanchis, Chercher Read, and Sengatera. Among these areas we randomly selected five for our study and we conducted a survey on Merkato, Piassa, Cassanchis, Chercher Road and Sengatera, from each of which households are randomly selected. From the total sample of 265, three fourth comprises households currently living in government/kebele and private rented houses and the rest one-third comprises households living in their own houses

Based on the policy issues required in achieving planned resettlement program without affecting any of the parties involved in the program, we prepared the questioner comprising of households' characteristics, housing characteristics, social services, security and questions on willingness to resettle and form of compensation. In designing and conducting the survey we tried to minimize the occurrence of biases³ that may arise in using CVM such as strategic biases, hypothetical and compliance biases and scenario specification. This has been done (as noted by Whittington et al, 1990) by designing the questions in our Household Survey Questionnaire in an incentive comparable format such that lying is avoided. For instance, appropriate hypothetical scenario has been set to the respondents to avoid ill-considered answers on their preferences, attitudes, form of compensation and the characteristics of the resettlement situation.

In the preference to forms of compensation part of the questionnaire, we classified the total sample in to two groups. The first group comprises those who currently live on rented houses (either government or private houses). The second group includes all households who live on their own houses. At least three forms of compensation were given to the respondents. For the first group the choices were 'house to rent', 'house to own' and 'plot of land'. For the second group the choices were "a plot of land and money", "only money" and "an equivalent house". If these choices did not include his/her preference, the respondent was given a chance to state his/her preferred form of compensation. (The questionnaire can be obtained up on request to the authors).

Before conducting the survey we provide training to ten enumerators who are all college students and we conducted a pretest survey that helped the enumerators to administer CV survey as well as to check the wording and ordering of the questioner.

4.3. Model Specification

4.3.1. Households' willingness to resettle

To capture individual preferences between the old and the anticipated new resettlement area and determine the factors influencing his/her decision to move or not to move to the new area, a discrete econometric model has been used. This approach works with the utility

function in that the utility derived from using the new resettlement area may be expressed as a function of several attributes such as the socioeconomic and demographic characteristics of the household, environmental characteristic of the area, cultural settings and other attributes. Thus what is needed is a model that describes the probability that a particular household will choose to move a new resettlement area. In this approach, first it is assumed that a household chooses between living in the current area or to move to other area based on maximizing the two conditional indirect utility functions, the first of which describes the utility gained from moving to the new resettlement area, and the second utility derived from the current neighborhood.

The probability that a family will decide to move to the new resettlement area rather than staying in the current neighborhood is the probability that the conditional indirect utility function for the former is greater than the conditional indirect utility function for the latter. Therefore, let U^n represents the utility a household gains from the new resettlement area, and U^o represents the utility a household gains by staying in the current neighborhood, the observed choice between the two alternatives reveal which one provides the greater utility, but not the unobservable utility. The observed indicator equals one if $U^n > U^o$ and zero if $U^n \leq U^o$.

The household will connect to the new improved water supply service or not. The choice is influenced by both the household attributes and the current neighborhood characteristics. The common formulation for this model is

$$U^n = \beta_n X + \omega_n \dots\dots\dots (1)$$

$$U^o = \beta_o X + \omega_o \dots\dots\dots (2)$$

Where X = vectors of explanatory variables which include socioeconomic and Demographic characteristics of the household and neighborhood attributes, β 's = parameters of the model and ω 's = the error terms.

Now if we denote $Y = 1$ when the individual is willing to move to the new resettlement area, then the probability that a household chooses the improved water service is

$$P (Y = 1|X) = \text{prob} (U^n > U^o)$$

$$\begin{aligned}
&= \text{Prob} (\beta_n X + \omega_n - \beta_o' X - \omega_o > 0 | X) \\
&= \text{Prob} [(\beta_n - \beta_o')X + (\omega_n - \omega_o) > 0 | X] \\
&= \text{Prob} (\beta' X + \omega > 0 | X) \\
&= \text{Prob} (\omega > -\beta' X | X)
\end{aligned}$$

If the distribution is symmetric,

$$\begin{aligned}
P(Y=1|X) &= \text{prob} (\omega < \beta' X) \dots\dots\dots(3) \\
&= F(\beta' X)
\end{aligned}$$

Where F is cumulative distribution function (CDF). This provides an underlying structural model for the probability. This model is to be estimated either using probit or logit model, depending on the assumption on the distribution of the error term (ω) and computational convenience. Assuming ω is normally distributed with mean zero and variance one; our model takes a form of probit model. In this qualitative model, respondents' response is equal to the indirect utility that the household receives from willing to move to the new area than continuing to live on the current neighborhood (Green, 1993). Therefore, in this study, assuming the probability of a household to make a particular choice is a linear function of his attributes; the following probit model will be used to estimate the household's probability of willing to move to the new resettlement area.

$$P(Y=1/X) = \beta' X + \omega \dots\dots\dots(4)$$

Where: **Y**, the dependent variable, is given 1 if the household decides to move to the resettlement area. Otherwise it is 0; **X** is a vector of socio economic characteristics of the household and environmental factor that are hypothesized to influence his/her decision to move to the new resettlement area; **β'** is vector of regression coefficients to be estimated; and **ω** is error term used to capture unobservable factors and its distribution is assumed to be normally distributed with mean 0 and variance 1.

4.3.2. Households' Preference to Form of Compensation

To analyze the determinants of households' preferences to different forms of compensation they would like to accept if they are to move to other resettlement area, we used a multinomial logit model, which is a simple extension of the logit discrete econometric model. It is used to analyze households' preferences when they are faced with more than two choices and when the outcomes cannot be ordered. Accordingly, following Scot

(1997), the probability of an individual to choose one form of compensation over the other is given by

$$\Pr(y_i = m / x_i) = \frac{\exp(x_i \beta_m)}{1 + \sum_{j=2}^J \exp(x_i \beta_j)} , \quad \text{for } m > 1 \dots \dots \dots (5)$$

Where y is the dependent variable with outcome J . $\Pr(y_i = m / x_i)$ is the probability of observing outcome m given the individuals characteristics x_i .

The multinomial model can also be expressed in terms of the odds of outcome m versus outcome n given x :

$$\begin{aligned} \Omega_{m/n}(x) &= \frac{\exp(x_i \beta_m)}{\exp(x_i \beta_n)} \\ &= \exp(x_i [\beta_m - \beta_n]) \end{aligned}$$

Assuming that the average utility is a linear combination of the characteristics of the individual, the multinomial logit model can be estimated using the following model (Scot, 1997).

$$v_{im} = X_i \beta_m$$

Where, v_{im} is the average utility of individual i by choosing outcome m . X_i is the socio-economic and demographic of the individual and environmental characteristics of the individual's neighborhood. In our case m represents the three different form of compensation the respondent is willing to accept: house to rent, house to own and plot of land in case of rented households. The different socio-economic and demographic characteristics of the household and its environmental characteristics are given in table 2.

5. Study Findings

5.1. Results of Descriptive Analysis

As mentioned elsewhere in this paper, the need for involuntary resettlement cannot be eliminated particularly in big law income cities (such as Addis Ababa) that have unplanned physical development and deteriorated environmental conditions. This requires establishing a policy and guideline framework that strategically ensure the effected people to be at least as well off after resettlement as they would have been without the resettlement. This entails the need to understand the socioeconomic and environmental characteristics, the attitude and

opinion, as well as the willingness of the households to move to the new resettlement area the form of compensation they are willing to accept. Besides, the major determining factor for their willingness to move should also be thoroughly understood. Therefore, in relation to these issues, based on the descriptive and multivariate econometric analyses, the empirical findings of the contingent valuation survey are presented in this section.

5.1.1. Socio-economic characteristics

A total of 265 sample households were included during the survey. Of the total sample, 140 (53%) are male respondent and 125 (47%) are female. About 61% are head of the household though only 53% are married. On average, the age of the respondent is 34.4 years. The average family size of the sample household is about 5.4. The average education level of the respondent is complete of grade ten, ranging from a minimum of not able to write and read to first degree university graduate. The data about the occupation type of the respondent revealed that 52% are employed; out of these 35% are government employ, 22% self-employed and the rest works on private organization and /or NGO. The study result on the socioeconomic characteristics of the sample households shows that the average monthly expenditure and income of the sample household is Birr680.23 and Birr951.88, respectively. The income level ranges from a minimum of Birr60 to a maximum of Birr12000 per month. Regarding the housing situation of the survey area, the data indicated that at least 64% are currently living on government/kebele houses, 10.9% are rented from private house ownership and 24.2% live in their own house. Rent price ranges from birr two to Birr2000 per month. Basic facilities such as water and electricity are either used privately or in the form of sharing, and 46% and 81% of the sample households are privately connected with the water supply and electric line, respectively. Of the total, 66% and 68% have telephone and television in their home, 50% use kitchen privately and 32% share. Charcoal and kerosene are used as a source of energy for cooking by 48.9% each. Of the total sample, only 3.17% used electricity as energy source. Average size of the house including compound in the study area is 108.7m². Generally speaking, 21% of sample households who lived in the house for an average of 28.8 years respond that he/she is not satisfied with the housing situation currently live.

Social services such as school and health institutions are not a problem in the households' neighborhood. However, 27% of the respondent indicated that road is one of the major problems in their neighborhood. The major market center for the study area is village market (locally called Gudit), which at least 63% of the respondent use. Only 36% use supermarket. The result also shows the social and security characteristics of the study households. The study result regarding membership of local institutions such as 'Edir' and 'Ekub' and other social interaction in the neighborhood indicated that about 79% of the respondent are member of 'Edir', 25% have 'Ekub' and 52% have high social interaction in their current neighborhood. Households were also asked whether or not their neighborhood is secured i.e. whether or not they feel secured living in their neighborhood. Table 3 (see Appendices) shows that about 70% of the respondents say no 'theft' problem, 84% respond no group conflict, 96.3% have peaceful relation with their neighborhood persons and in general, about 96% of the respondent said that they "feel secure" living in their current neighborhood.

5.1.2. Environmental Characteristics

In order to capture the environmental characteristics of the study area, some selected indicators have been taken into consideration. These include availability and type of latrine, source of energy used for cooking, sewerage facility and solid waste service in the area. Responses regarding the use of source of energy for cooking indicated that about 48.41% of the sample households' use charcoal and 48.41% use kerosene as source of energy. At least 58% use shared latrine, which is mainly dry pit latrine. Only 17% use septic tank and 11% use flush toilet. Sewerage line/scheme and solid waste disposal service are major problem in the area. It was about 53% and 49% of the respondents who respond sewerage and solid waste service as problem of the area, respectively. Generally speaking, households were asked about what they like and "dislike" about their neighborhood in relation to its security, infrastructure, access to transport, social services (health, education, electricity, etc) environmental sanitation (sewerage, solid waste disposal), access to local institutions (Edir, Ekub, etc) and social interaction. The responses are shown on table 4 (see Appendices). For example, 85% of the respondent like or feel secured living in their current neighborhood.

5.1.3. Willingness to Resettle and Form of Compensation

Households in the selected study area were asked about their willingness to move to other resettlement area from where they are currently living. Before this question is asked, respondents were briefed about the redevelopment plan of the Addis Ababa city government based on the master plan of the city and the different positive impacts on the growth of the city and its residents as well as the international standard the city will acquire. They have been also briefed that this significant positive impacts that will be expected to occur due to the redevelopment plan to be realized, it may displace some or all of the residents of this area. The city government has legal obligation to give or facilitate compensation for the displaced people based on the legal property right the displaced household/individual has.

Given the above explanation, the respondents were asked different questions that enable us to capture their opinion about the existing housing situation, their willingness to move to other area, form of compensation if they moved to resettlement area and other related questions. The results are seen in table 5 (see Appendices).

The results of the CV survey on willingness to resettle indicate that 42% of the respondents are willing to move where as 58% are not willing to move to any resettlement area. Different forms of compensation were stated by the households depending on ownership of the houses on which currently living. Accordingly, 53% of those who live in rented houses stated that 53% prefers “house to rent”, 43% prefers “ house to own” and only 4% prefer if they will be compensated “plot of land”. These different groups of respondents were also asked a follow-up question based on their stated preference to know the maximum rent they are willing to pay per month, the maximum amount of cost expected for the house to own and the minimum size of plot of land they prefer to be compensated, respectively. A household is willing to pay, on average, Birr37.45, Birr131.33 and Birr18408 for a house with all facilities and one-bedroom, two-bed room and three-bedrooms, respectively. Regarding the maximum cost for the house, study result show that the respondent expects the new house to cost Birr 65917.42 and Birr 27,905.47 if the terms of payment is per month with some down payment and without down payment respectively. This is as expected since the study areas are

considered as slum areas where mainly low-income and middle-income groups are living. Those who prefer “plot of land” stated an average of 250m² as their minimum size of land.

On the other hand, 71% of households who are living in their own private houses prefer an equivalent house, 4% in the form of money at market price at the time of the event, and 25% need a plot of land. On average, household, who prefers plot of land and money, is willing to accept if he/she is compensated with 344.9m² of land and Birr289236.80. Those who prefer only “money” are willing to accept Birr130000.4, on average. This seems illogical but if one considers the existing housing condition of the latter group compared to the first, the amount stated may look convincing. Table 5 shows the summary of form of compensation and related issues.

Out of the total sampled households, 56% would like to own house, 39% would like to rent and the rest 5% do not want to live on public housing. Half of the total sample households prefer to move to a single story, low cost houses in the newly developed residential areas in the outer part of the city whereas 48% of total sample prefers to move to modern apartment flats of relatively high rent area in the inner part of the city. Households currently living on government/ kebele rented houses accept the option of a home improvement loan to improve the existing housing condition to meet the city’s standard and 67% are willing to buy the house with monthly payment only. About 22% are willing to buy the house with some down payment and the rest to be paid monthly. Small percentage (9%) does not accept the option of loan for house improvement and buying the house under any term of payment.

5.2. Results of Multivariate Analysis

5.2.1. Determinants of Willingness to Resettle

To determine the key factors that determine the households' willingness to move to the new area, we estimated a probit model using STATA software. The descriptive statistics of the variables included in the multivariate analysis are shown in table 6 (see Appendices).

As can be seen from the probit model regression result in table 7 (see Appendices), the estimated likelihood ratio is equal to 47.98 indicating that the overall model is a good fit. The

pseudo R^2 of 16.5% shows that the regression explains 16.5% of the total variation. This implies that there are other influential factors, in addition to those included in our study, which can also have an effect on the decision of an individual to move to other area. The variables existing housing situation, security of the neighborhood, membership or participating in the local institution such as Edir and Ekub and Environmental sanitation indicators such as sewerage and solid waste service of the areas are found to have significant effect on the household's decision to move to other area. The variable 'existing housing situation' has the expected negative sign and is significant at least at 1% level of significance. This indicates that resettles who are not willing to resettles or move to other areas because they are satisfied with existing housing situation. Similarly the variable 'security' has negative sign and is significant at 1%, indicating that those who feel secured living in the current neighborhood are not willing to move to other area. Participating in different local social and economic institutions such as Edir and Ekub as well as strongly interacting with the neighborhood strongly affect households decision to move to other areas since social institution and interaction such as Edir have strong cultural value in the study area in particular and in Ethiopia in general. As we see in table 10, household's social interaction with the neighborhood has positive and significant effect on household's decision to move. This is in line with our a priori hypothesis (see table 2) that the effect of the variable depends on the household expectation of its neighborhood on whether or not they are willing to move in that if the household expects that its neighborhood are also willing to move, the more likely response will be affirmative since it does not want to loss its relation. If its expectation is on the other way, it may not willing to move since creating social relationship with new comers is not easy, at least in short run.

The existing environmental characteristics of the respondents' neighborhood such as sewerage and solid waste service positively and significantly affects the respondent's willingness to move to other areas indicating that respondents who respond that sewerage and solid waste service are not satisfactory are willing to move to other area. This implies that resettlement can improve the environmental characteristics of households. Another important result obtained from the study is that the constant term in probit estimate (see table 7) is found to be positive and significant at least at 1% level of significance. This, from urban

development strategy point of view, indicates that relocation of households is an optional strategy to improve the physical and environmental situation of the city, which is supported by the resident of the study area given that other factors being constant. The result indicated that one has to consider the above factors in order that planned resettlement program will be implemented successfully in the city.

5.2.2. Determinants of Preference to Form of Compensation

Identifying the major factors that influence households' preference to the different forms of compensation if it is a must to leave and move to other resettlement area is essential for policy making. Accordingly, to analyze the determinants of the probabilities of a respondent to choose one form of compensation over the other, we used a multinomial logit model. As we mentioned in the previous section, the three forms of compensation presented to households living in a rented house are 'house to rent,' 'house to own ' and 'plot of land' Given this choices, the individual takes in to account different socio-economic, demographic and environmental factors in deciding his preferences. The descriptive summary of the variables included in the multinomial logit estimation is given on table 9, and the estimation result is shown on table 8 (see Appendices).

As can be seen from table 8 the pseudo R2 is 69.7% showing the regression estimation explains 69.7% of the total variation, which indicates our explanatory variables satisfactorily explains the effect on individuals' probability of choosing one outcome over the other. The comparison outcome is 'house to rent' form of compensation, which is the most frequently chosen by the respondent. The variables monthly income, environmental sanitation, willingness to own /rent public housing in the new developed area and marital status of the respondent affect the respondent's probability of choosing 'house to own' and 'plot of land' over 'house to rent' form of compensation. Age of resident, status of respondent proxied by whether the respondent is head of the household or not, and current housing condition affect respondent's choice of 'plot of land' (but not 'house to own') over 'house to rent' form of compensation. On the other hand, number of years lived in the neighborhood, participation on local institution such as 'Edir' and 'Ekub' and problem of group conflict in the

neighborhood affect respondent's choice of 'house to own' (but not 'plot of land') over 'house to rent'.

Monthly income of a household positively and significantly (at 5%) affects the probability of a household to choose " house to own " over " house to rent", indicating that higher income households prefer if they are given a chance to own their own houses other than renting houses since they are economically capable of constructing houses if they are given the opportunity. Similarly, the variable 'marital status' of the respondent is found to be positive and significant at least at 10%, showing that married households prefer house to own to house to rent if they are to be compensated. Number of years the household stayed in the neighborhood is negative and significant at 10%. This implies that households who stay for longer time in the existing neighborhood prefer "house to rent" over "house to own" since living longer time in an area means more adaptation to different social, cultural and other situations, and thus prefer to stay there by renting other houses or buying the house if they are given the opportunity so as not to lose the social and cultural interaction they acquired for long time.

The variable for environmental sanitation indicator is found to be positive and significant at least at 10% level of significance. It means that those households who consider the sanitation of their current neighborhood is not good are highly likely to prefer "house to own" to "house to rent" form of compensation. Since environmental sanitation has characteristics of public goods, in which the bearer of the costs is not only the polluter but also others, it is hardly possible to keep the sanitation of a neighborhood only by the willingness of individual action. However, it is possible if one has its own house for sanitation at least in his/her own compound. The variable for "local institution" indicator such as membership on neighborhood "Edir", "Ekub" and "other social interaction" is negative in sign and significant at least at 10%. This indicates that households who are member of "Edir" or highly socially interacting in their current neighborhood are less likely to choose 'house to own' over ' house to rent' since they give more value for social issues or it is hardly possible for them to create another new social interaction with new neighborhood, where they can own house. The other variable which is found to be negative and significant at least at 1% level of significance is

the respondent's willingness to rent public houses in the newly developed area given the opportunity. It means that those who are willing to rent public houses in the new developed area, if they are given the opportunity, are less likely to choose "house to own" over "house to rent". On the other hand, age of the respondent, status of the respondent, marital situation, family size, monthly income, existing housing situation, environmental sanitation and willingness to own /rent public house affect the probability of the respondent's choice of "plot of land" over "house to rent" form of compensation.

Age of the respondent is negative in sign and significant at 1% indicating that older individuals are less likely to choose plot of land over house to rent. Status of the respondent is positive in sign and significant at 1%. This shows that for the head of the household, the probability of choosing a plot of land over house to rent is higher since he/she prefers to live on privately own house, which requires plot of land to construct, to living on rented houses. The variable marital status of the household is found to be negative in sign and significant at least at 1%, indicating that married respondents' probability of choosing "plot of land" over "house to rent" is higher than those not married respondents since it is difficult For them to live on rented houses since their privacy is more affected in rented houses than on their own houses. Family size negatively affects the probability of a household to choose "plot of land" over "house to rent". This means that a household with large family size prefers to choose "house to rent" to "plot of land" since large family size means more household expense or less saving which means less capable of constructing house by acquiring plot of land.

Monthly income is positive in sign and significant at least at 1%, indicating higher income households' probability of choosing "plot of land" over "house to rent" is higher since they are economically capable of constructing houses if they get the chance of acquiring plot of land for house construction. Existing housing situation also affects positively and significantly (at 1%) the probability of choosing "plot of land" over "house to rent" This means that those who are not satisfied with their current housing situation are more likely to choose "plot of land" over "house to rent" so as to construct relatively better houses. The variable for environmental sanitations is negative in sign and significant at least at 1% level of significance.

Finally, the variable "willingness to rent public house in the new developed area is found to be negative in sign and significant those who are willing to rent /own public houses in the new developed are less likely to choose " plot of land " over "house to rent", which is as expected.

Therefore, based on the above discussion households currently living on government/ kebele or private rented houses are affected by their socio-economic and environmental characteristics in their decision for choosing forms of compensation as well as in deciding to move to other resettlement area if their current neighborhood is required by the Addis Ababa city government for redeveloping the area for the socio-economic benefit of its residents.

6. Summaries and Conclusion

6.1. Summary

The spatial, physical and socio-economic condition of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the city. In addressing the problems, the suggested government intervention strategies include, among others, the relocation and resettlement of residents for efficient utilization of potential sites and bringing balanced and coordinated investment/development in different parts of the city. Therefore, this study aims to analyze determinants of households' willingness to resettle or move from potential sites as well as the factors influencing households' preference to alternative forms of compensation.

The study used both primary and secondary data. A contingent valuation survey was conducted to obtain data from 265 sample households from five selected areas, where the Addis Ababa City Administration prepared a redevelopment plan. Other relevant secondary data are also used as a source of information. We used probit and multinomial logit model to analyze the determinants of households' willingness to move to other areas and households' preference to different forms of compensation they would like to accept, respectively. In addition to multivariate econometric analyses, we also used univariate and bivariate analytic methods to describe the data. Accordingly, the descriptive statistics for willingness to resettle revealed that 42% of the total sample households are willing to move to resettlement area given that their preference to forms of compensation are fulfilled.

Study findings on forms of compensation for rented houses revealed that 53% prefer if they are given a chance to rent a house, 43 % prefer to own a house and the rest 4% prefer if they are given plot of land as compensation. On the other hand, 71%, 25% and 4% of sample households living in their own house would like to accept if they will be compensated "an equivalent house", or "plot of land & money" or "only money", respectively.

Households' willingness to move or their decisions to move to other area is influenced by their existing housing situation, the security of their current neighborhood, participation in local institutions such as "Edir" and "Ekub" and environmental variables such as existing sewerage system and solid waste service in their current neighborhood. This indicates that it is advisable for policy/ decision makers to consider these factors in planning resettlement program for redeveloping the slum areas of the city.

Rented households' probability of choosing "house to own" over "house to rent" is positively affected by their monthly income, environmental sanitation and the marital status of the respondent. Number of years the household lived in the neighborhood, participating in local institution (Edir and Ekub), areas with less problem of group conflict in the neighborhood and households' willingness to rent public housing in the new developed area are negatively affected households' probability of choosing "house to own" over "house to rent". This shows that in planning resettlement program that require compensation, it will be advisable if higher income and married resettlee will have access to own house upon their expense. Moreover, households who place more value for environmental characteristics preferred if they are given the chance to own house. Similarly, resettlement program should also consider the local social institution, security and willingness to rent public housing in designing and implementing the program. On the other hand age of the respondent, being married, problem of environmental sanitation, and households' willingness to rent public house on the new developed area negatively affect the households' probability of choosing "plot of land" over "house to rent". Being household head, monthly income of the household, and satisfaction with the current housing situation positively affected households' probability of choosing "plot of land" over "house to rent".

The study concludes that resettlement is a possible option to improve the socioeconomic and physical condition of the city since households are willing to move to other area if the compensation enables them to restore the existing situation. However, the socioeconomic, demographic, local institutions (such as “Edir” and Ekub”) and environmental characteristics of the displaced people should be taken in to consideration. This requires formulating policies and guidelines that fundamentally aim at least to restore the current standard of living of the resettle.

6.2. Conclusion

Based on the findings of the study the following conclusions can be drawn:

- Given that all factors being constant, households in the study area are not against the resettlement program of the city; implying that the suggested relocation and resettlement program designed by the municipality is a possible option to improve the physical, socioeconomic and environment problems of the city.

- Access to basic social service, improved sanitation service as well as secured life in the new resettlement area not only enhance households’ probability of decision to move, it also prevents their impoverishment and helps to alleviate the city’s socioeconomic and environment problem. Due consideration should also be given to social & cultural norms of the resettlee.

- Access to basic social service, improved sanitation service as well as secured life in the new resettlement area not only enhance households’ prob. of decision to move, it also prevents their impoverishment and helps to alleviate the city’s socioeconomic and environment problem.

- Compensation for those residing in rented-house can take different forms including ‘house to own’, ‘providing plot of land’ and ‘access to rent public housing’. However, ‘House to rent’ is more preferred by rented- households

- Those living in their own houses can be compensated with ‘plot of land and Money’, ‘only money’, or ‘equivalent house’. ‘Equivalent house’ is more preferred by Owned-households.

- Married households, higher income households, those who attached more value to environmental issues prefer if they get opportunity to own house up on their expense. Those who are socially integrated, lived longer period in the current neighborhood, Aged people, those with large family size, and those willing to rent public housing prefer if they get opportunity to rent the house currently live.

- **From the municipality side:** access to credit for house improvement and creating enabling situation for selling Gov. houses to those willing and able to borrow and buy is an option to upgrade the slum areas without affecting the resettles. This can also minimize the municipality cost for compensation.

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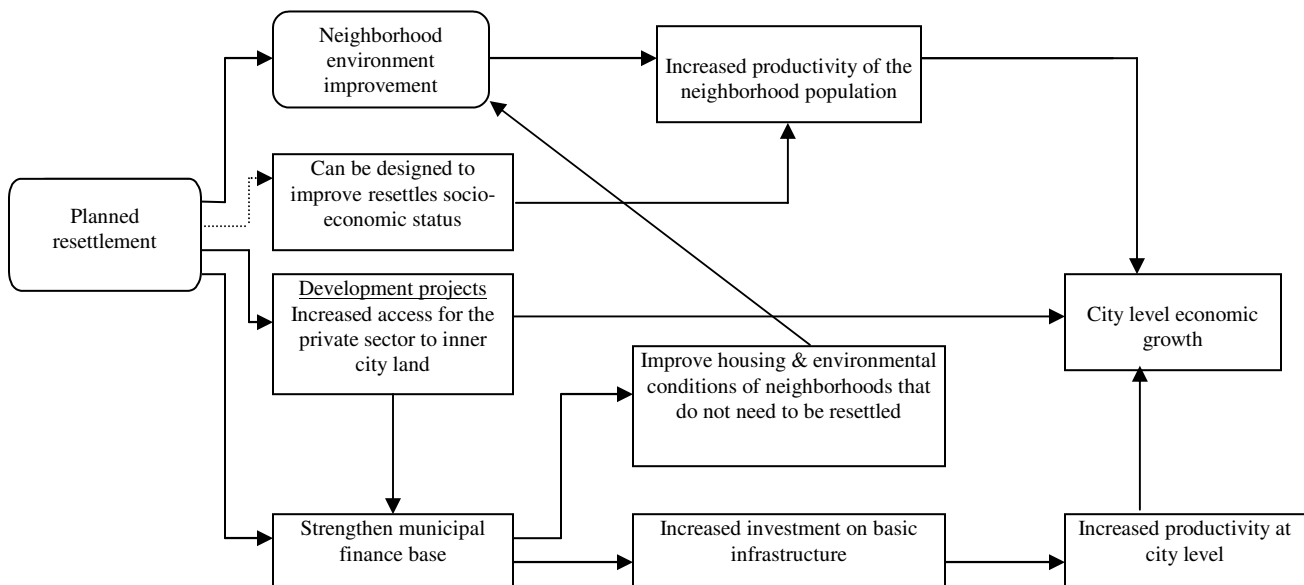
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Appendices

Figure 1: Resettlement induced development approach



Source: Adopted from Elizabeth T., 1996.

Table 1: Number of households resettled from three projects

Resettlement program	Number of households resettled
Al-Tad	319
Ring Road	219
Yemeru	30
Total	568

Source: Elizabeth (1996)

Table 2: Definition and specification of variables used in the probit and Multinomial logit estimation

	Variables	Definition
1	Age of respondent	Continuous variable in number of years
2	Marital status	Dummy: 1 if the respondent is married; 0 if otherwise
3	Sex	Dummy: 1 if male; 0 if female
4	Education	Continuous variable in years of schooling
5	Family size	Continuous: No of individuals living in a household
6	Monthly income	Continuous: average monthly income of the household in Birr
7	Years in the neighbor hood	Continuous: No of years the household live in the neighborhood
8	Housing situation	Dummy: The housing situation such as access to basic service, number of rooms and building structure. 1 if satisfied 0 if otherwise
9	Market place	Dummy: market type the household usually used. 1 if super market; 0 if village market.
10	Feel secured	Dummy: whether the neighborhood is secured in terms of "Theft problem", "group conflict" or "peaceful relation with the neighbors." 1 if fell secured; 0 otherwise.
11	Ownership of house	Categorical variable; 1= if the house is privately owned 2= if rented from private 3 =if rented from government/kebele
12	Willing to move	Dummy; 1 if the household is willing to move; 0 if otherwise
13	Form of compensation	Dummy; For rented household: 1 if house to rent; 2 if house to own; 3 if plot of land. For private house owner: 1 if plot of land and money; 2 if money; 3 if equivalent house
14	Willing to own/rent public housing	Dummy; 1 if willing to own; 2 if willing to rent; 3 if neither 1 or 2
15	Local social institution	Dummy; 1 if the household participates in 'Edir' or 'Ekub' in its neighborhood; 0 if otherwise We expect positive coefficient if the resident expects that all the residents of its neighborhood are willing to move, otherwise we expect negative since the residence may loss that relationship
16	Environmental sanitation	Dummy; 1 if the resident is not satisfied with the existing environment sanitation including the solid waste service and sewerage system; 0 if otherwise

Table 3: Social, Security and Environmental Characteristics

No	Characteristics of neighborhood/household	(%)
1	Social institution (membership) Member of Edir Member of Ekub Any social interaction	79 25 52
2	A. Security Theft problem Group conflict problem Peaceful relation with neighbor	30 16 97
3	Access to Latrine Private Shared No	36 57 7
4	Energy source for cooking Charcoal Kerosene Electricity	48 48 4
5	Sewerage problem	53
6	Solid waste service problem	49

Source: study result

Table 4: Summary of the socioeconomic and environmental characteristics of households' Neighborhood

No	Indicators	Frequency (%)	
		Like	Dislike
1	Its security	218 (85)	40 (15)
2	Its infrastructure	235 (91)	22 (9)
3	Access to Transport	249 (97)	7 (3)
4	Social service (health education, electricity, Telecommunication etc)	246 (96)	9 (4)
5	Environmental sanitation (sewerage, solid waste service etc)	124 (48)	133 (52)
6	Access to local institution (Edir, Ekub, etc)	225 (88)	31 (12)
7	Social interaction among neighborhoods	221 (91)	23 (9)

Source: survey result

Table 5: Willingness to Move and Form of Compensation

No	Variables	Frequency (%)
1	House ownership Privately owned Rented from private Rented from government.	25 11 64
2	Willingness to move Willing to move Not willing to move	42 58
3	Form of composition -Rented household House to rent House to own Plot of land -Privately owned Plot of land and money Only money Equivalent house	53 43 4 25 4 71
4	Mean WTP house rent for house with facility and	

	One bed room (Br.) Two bed room (Br.) Three bed room (Br.)	37.5 131.3 1840
5	Mean size of land willing to accept (m ²) for rented household	255
6	Mean for cost of house to own a house: Payment per month with some down payment (Br.) Payment per month without down payment (Br.)	65917.4 27905.5
7	Mean willingness to accept for compensation for house owner family - Plot of land and money Land (m ²) Money (Br.) - Only money (Br.)	344 289,236.8 130000.4
8	Preference to own/rent public housing in new developed area: Willingness to Own Willingness to Rent Do not like the option	55 40 5
9	Interest for home improvement loan for privately owned household to stay on existing area Interested Not interested The house does not need improvement	50.4 48.3 1.3
10	Willingness to buy the rented government/kebele house after improving the house (for rented family) Yes, with monthly payment Yes, with down payment and then per month Not willing to buy	67 22 9

Source: survey result

Table 6: Summary statistics of variables included in the Regression

No	Variable	Obs.	Mean	St. Dev.	Min	Max
1	Sex	264	0.53	0.5002	0	1
2	Marital status of respondent	263	0.60	0.4899	0	1
3	Marital status of the household head	236	0.47	0.5002	0	1
4	Education level	264	10.35	3.3898	0	16
5	Family size	264	5.39	2.3936	1	12
6	Monthly income	264	910.59	1005.15	80	8000
7	Monthly expenditure	264	682.19	591.63	110	5140
8	Housing condition	258	0.79	0.4076	0	1
9	House ownership	257	0.75	0.4310	0	1
10	No of years in the neighborhood	252	24.78	15.59	1	60
11	Environmental sanitation	263	0.59	0.4922	0	1
12	Market place	252	0.37	0.4824	0	1
13	Membership in local institution (Edir)	264	0.79	0.4096	0	1
14	Security	264	0.82	0.3832	0	1
15	Access to basic infrastructure	264	0.89	0.3179	0	1
16	Willingness to move	260	0.42	0.4924	0	1
17	Age of respondent	263	34.40	13.10 ⁸	18	80
18	Form of compensation for rented houses	177	1.51	0.5744	1	3
19	Form of compensation for private house owner	88	2.45	0.8781	1	3
20	Willingness to own/rent public house	246	1.49	0.5907	1	3

Source: study result

Table 7: Probit Estimation-Dependent Variable is household's willingness to move for the whole sample

No	Independent variable	Coefficient (t-value)
1	Housing situation	-1.0593 (-4.82)***
2	Security	-0.6949 (-2.83)***
3	Local social interaction	0.4329 (0.011)**
4	Environmental sanitation	0.4489 (0.06)*
5	Constant	1.6044 (0.000)***
Number of observation = 254		Log pseudo-like hood = -143.1863
Wald chi 2 (17) = 47.98		Pseudo R ² = 0.1651
Prob > chi 2 = 0.000		

Source: study result

*** Significant at least at 1%, ** Significant at least at 5%, * Significant at least at 10%

Table 8: Multinomial logit estimation

No	Explanatory Variables	Dependent and variables (form of compensation)	
		House to own	Plot of land
1	Sex of Respondent ^d	-0.8659 (-1.09)	-120.9161 (-1.18)
2	Age of respondent	0.0276 (1.17)	-41.2481 (-4.72)***
3	Status of Respondent ^d	0.2111 (0.21)	1030.075 (16.32)***
4	Marital Status ^d	1.1994 (1.63)*	-347.0034 (-3.28)***
5	Education level	-0.151 (-0.99)	-15.857 (-1.12)
6	Family size	0.09985 (0.76)	-214.731 (-7.91)
7	Log of income	1.2504 (0.011)**	98.5617 (0.000)***
8	Years lived in the neighborhood	-0.0478 (-1.73)*	-7.2855 (-1.47)
9	Satisfied with current housing condition	-0.3155 (-0.46)	296.0878 (4.000)***
10	Environmental sanitation ^d	1.3936 (1.7)*	-1518.973 (0.000)***
11	Participation in local institution ^d	-1.1014 (-1.83)*	-34.1092 (-1.29)
12	Group conflict problem ^d	-2.8131 (-2.62)***	-1627.072.
13	Willing to own/rent public housing ^d	-5.7990 (-4.43)***	-144.6252 (-4.31)***
14	Constant	3.8835 (1.13)	1692.503.
Number of observation = 134		Pseudo R ² = 0.6969	Log pseudo-likelihood=-33.5676

Source: study result.

*** Significant at least at 1%, ** Significant at least at 5%, * Significant at least at 10%

Note: Figures in () are t-ratios d: dummy variable. Outcome "house to rent" is comparison group.

Notes

¹ In relation to this, there should be efficient urban land management system and the existing land lease policy should also fully consider the socioeconomic characteristics of the private sector that are supposed to redevelop the slum areas. This requires studying the demand side that addresses the private investors' willingness to pay for urban land in the city. See Alebel and Genanew (2007b)

² Till 1996, about 3,000 people in the City were affected by only three resettlement programs: Al-Tad, Yemeru and Addis Ababa Ring Road resettlement programs. These programs, according to a study by Elizabeth (1996), are neither officially publicized nor documented. They were unplanned and not governed by any policy frameworks. Her study also suggested the need for detailed planning, cautious design of the strategy and involvement of more actors.

³ See Mitchel and Carson, 1989, for the classification and description of the potential biases in the use of contingent valuation survey.