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**STRATEGIZING THE DECENNIAL CENSUS OF HOUSING FOR POVERTY
REDUCTION IN KENYA**

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Abstract: As the world gropes for the understanding and solutions to poverty, one of the its typologies that has come to the fore is housing poverty. Housing poverty afflicts developing countries in particular and solution to it may mean solution to other forms of poverty. One of the strategies that can be used to promote the understanding of housing poverty and hence show the way to its reduction is the decennial census of housing. This paper intends to determine whether the decennial census of housing can be used as a strategy for the reduction of housing poverty in Kenya. It evaluates the whole census business and recommends that some of the missing UN-recommended housing topics be incorporated for a complete portrait of housing poverty in the country. It also recommends that the analysis and reporting of the census survey should be more sensitive to the geographical and social extents of housing poverty in Kenya. This would transform the decennial census of housing into an effective strategy for poverty reduction for Kenya and for that matter any developing country in the world.

Key words: population and housing census, housing poverty indicators, poverty reduction, Kenya.

INTRODUCTION

Poverty is one of the greatest contemporary social challenges to mankind. For that matter, it has come under considerable attention of both by researchers and policymakers at local, national, regional and global scales. From the policy front, various strategies and programmes such as poverty reduction strategy papers (PRSPs), millennium development goals (MDGs) et cetera have been formulated to fight poverty. On the research front, studies have been initiated in order to understand poverty better so as to fight it effectively. Research or information generation is therefore a prerequisite strategy for the understanding and hence the reduction of poverty. One of the advances made so far in the understanding of poverty is that poverty has many facets contrary to the original perception that confined poverty to the income factor only (Wratten 1995).

One of the typologies of poverty that has come out strongly is housing poverty (Tipple and Korboe 1995; Pugh 1995)). Housing poverty in this case is defined as any deprivation that an individual, household or community faces in the process of consuming housing; the deprivations arise from certain inadequacies of housing. The extreme extent of housing poverty is homelessness. Housing can be strategic in poverty reduction in that solving its inadequacies will help solve other aspects of poverty such as poor health (UNCHS 1996).

Housing poverty or inadequacy has three important aspects: quantity, quality and costs. These three are interrelated as detailed in the following discussion. Information on quantity or the supply aspect is relevant in establishing whether there is enough housing stock to cater to the current level of household aggregate. When the stock is not enough certain households are likely to go without housing (homelessness), or share the available stock (overcrowding), or be forced to consume housing that do not meet the minimum standards of quality specifications (informalism). The last one is a direct reference to informal settlements or slums in developing countries. The housing stock in this category is poor or inadequate in terms of quality. Indicators of quality in this case will include:

construction materials, and availability of services like water and sanitation, solid waste disposal.

Costs are also pertinent to the consumption of housing as it is the primary factor that determines accessibility by households. In some cases housing stock may be quantitatively adequate but when the costs of accessing them in terms of purchase prices or rents are high then households may be forced to crowd up to share the costs or resort to poor quality housing as already indicated. Housing costs may also generate other aspects of poverty as is explained in the paper.

The housing market, like any other market, is characterized by the factors of demand and supply. Quantity and quality aspects can be put on the side of supply (production factors) while costs—precisely referring to affordability—may be put on the side of demand (consumption factors). Imbalance in these factors may result into housing poverty. Secondly, any imbalances in these factors require policy intervention. To detect these imbalances data is required in a comprehensive way in the various aspects of quantity, quality and costs that can only be provided by a statistical programme like the decennial census of housing.

A recent African symposium on statistical development held in Cape Town, South Africa, noted that one of the bases for the update of the census programme for the African region is increased policy relevance of topics (Anon 2006). In the case of housing, one of its most useful policy application area concerns poverty reduction. This paper therefore looks at how the decennial census of housing can be tweaked in Kenya so as to contribute to the noble objective of poverty reduction within the sector and at a broader perspective. The UN-recommended housing topics are used as a framework for assessing the coverage of the census topics. From this, the assessment proceeds to the current data analysis and presentation practices. In both cases, vital suggestions are made for the improvement of the decennial census of housing in Kenya.

PRINCIPLES OF HOUSING CENSUS

Background and Definition

Population census is a centuries old tradition of countries of the world. Caven, Evans and Beatty (1998) have cited its historical beginnings in the Book of Exodus and attributed its administrative and fiscal usage to the Roman Empire. In the US, the first census was taken in 1790 and Kelman (1985) pointed out that the US is the first country in the world to take a regular population census although Diamond (1999) indicated that the first censuses occurred in the Scandinavian countries in the early eighteenth century. However, census of housing was first taken in the US in 1940 (US Bureau of the Budget 1963). In the UK, population census has been conducted every ten years since 1801 save for 1941 due to interruption of the Second World War (Boyle and Dorling 2004). In the year 2000, China—the most populous country in the world, conducted a remarkable census that involved 10,000 tons of questionnaires and 5 million enumerators (Lavelly 2001).

More often than not, the census is conducted as a population and housing census (Casley and Lury 1981). According to Benjamin (1970:31), dwellings and people are inseparable hence “it is customary in most countries to conduct the housing census simultaneously with, and as an integral part of, the population census”. Because households are the enumeration units, “it is difficult to carry out a population census without at the same time carrying out a large part of a housing census” (Benjamin 1970:31). Generally, in Africa according to Kiregyera (1986), until 1970, population censuses were conducted separately from housing censuses. Since then, both censuses have been combined to form Population and Housing Census, a move that has achieved economy in both financial and logistical resources (Kiregyera 1986). This is a boon for developing countries where such resources are scarce.

The UN (1967) defined census as the total process of **collecting, compiling, evaluating, analyzing and publishing** demographic, economic and social data pertaining, at a specific time, to all persons in a country or in a well-delimited part of the country. It provides a national inventory, a picture of the situation existing at the time of the census (Casley and Lury 1981). Housing information can be classified under social/economic data in these respects and census of housing would be useful in recording housing inventory and portraying the state of housing at a particular time of the census. Census of housing therefore refers to the deals of data pertaining to the production and consumption of housing at a specific time and place in a country. The UN (1997:3) has defined housing census as: “ the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating statistical data pertaining, at a specified time, to all living quarters and occupants thereof in a country or in a well-delimited part of a country”. A census has four basic characteristics, namely: individual enumeration, universality within a defined territory, simultaneity, and regular periodicity (UN 1997).

Individual enumeration means that a census survey, as opposed to a sample survey, covers each and every unit of the population. Universality means that the same data collection instruments and procedures are applied to all units of the population that will enable aggregation and comparability. This will involve the use of same questionnaire schedule for all units or particular group of units of population. Simultaneity means that the count is taken at the same time period within the spatial limits of the population. The census must also take place within regular periods of time. The periodicity recommended in most census manuals is ten years, preferably using years ending in 0 or 1 (Casley and Lury 1981). Decennial census of housing therefore refers to a situation where the census of housing takes place every ten years as in the case of Kenya.

Housing Census Models

The four characteristics (individual enumeration, universality, simultaneity and regular periodicity) describe the traditional or conventional census model. The conventional model varies from country to country but involves field surveys and enumeration of the entire population. Other countries may use the uniform schedule in which a single form is used to survey and collect data from the entire population. In other cases, a combination of census and sample surveys has been conducted using the short and long forms.

The short form is used to collect brief but essential information about every unit of the population (here means households) while the long form is used to collect more detailed information from a sample of the population simultaneously. In the 2000 census of China, for example, the short form contained two items about housing—i.e. number of rooms and floor area; while the long form included questions on the use and age of dwelling, construction materials, fuel use, source of water, type of sanitary facilities, housing tenure, and the value of monthly rent of the property (Lavelly 2001). In the case of the US, the short form of the 2000 census contained only one question on tenure (rent or own) while the long form included several other questions on housing (Carliner 2001)

The long form has been in use in the US for a long time and is now being relegated (Waite and Reist 2005). The data from the long form in this case will be collected through the American Community Survey which has a sample size of 3 million housing units (Alexander and Tupek 2003). The UK used the conventional model in its 2001 census with an innovative mail back procedure whereby enumerators dropped off the questionnaires to the population and the population filled them and mailed back to the Office of National Statistics (Cook 2004). Although believed to be the most advanced census operation in the world, the UK's 2001 census was dismissed as a bygone legacy of the "pen and paper" era (Boyle and Dorling 2004). This implies that the information the census seeks to find out through field survey could easily be obtained from computerised records (Martin 2006).

The conventional model has come under serious challenge by alternative models that are already in use in some countries today (UN-DESA 2004). The alternative models include a combination of administrative sources, household surveys, satellite imagery, and use of the internet (UN-DESA 2004). Countries in Western Europe and the Scandinavia are routinely moving away from conventional census model to utilization of routinely collected data (rolling surveys) plus data from administrative registers (Boyle and Dorling 2004), although Griffin (1999) believes register-based estimates may never replace census altogether even in Europe. The logic of it is that if data on individuals or households already exist, it becomes cost-effective to rely on this information. In cases of information gaps from these administrative records, then rolling surveys could be used to fill the gaps instead of a complete census (Boyle and Dorling 2004). The countries that have moved from the conventional model in this case include France (Durr 2005), Netherlands (Nordholt 2005), Denmark (Cook 2004), and Finland (Myrskylä 1991). France, for example uses the rolling census model that involves enumeration of population by means of a continuous survey covering the whole country over a period of time rather than in temporal simultaneity (Durr 2004). Finland on the other hand solely uses administrative registers (Myrskylä 1991). The country keeps a Register of Buildings and Dwellings where housing data is obtained. Germany also plans to move away from the conventional model in its plans for the 2011 census owing to legal problems that have crippled the use this model (Szenzenstein 2005).

Topics of Housing Census

The contents of the housing component of the census can be seen in part D of the 1999 census questionnaire as shown in the appendix. It consisted of ten entries on housing

attributes under the topics of: dwelling units, tenure status, construction materials (roof, wall, and floor), main source of water, main type of sewage disposal, main cooking fuel, and main lighting fuel. The 1989 census did not have questions about the number of dwelling units and rooms (CBS 2002). The rest of the questions remained the same for the 1999 census. The topics of the 1989 census were selected from a list of topics recommended by the United Nations for investigation in housing censuses (CBS 1996). According to the CBS, the 1999 Census questionnaire included topics aimed at meeting national needs and international comparison (CBS 2002).

The current UN recommended housing census topics are contained in the *Principles of and Recommendations for Population and Housing Censuses Revision 1* (UN 1997). Unlike population topics, housing topics are not so controversial. For the former, topics such as ethnicity, religion and income have raised a lot of controversy in the US and UK (see for example, Schor 2005, Cook 2004, Aspinall 2000). The US census, for example, is always characterized by litigation and political outcry; as discussed by Mitroff, Mason and Barabba (1983) on the 1980 census, O'Hare (1992) on the 1990 census and, Weakliem and Villemez (2004) on 2000 census.

Importance of Housing Census

Housing census is a costly and resource demanding exercise but it has to be conducted because of its importance in social development. The census serves various purposes including the following.

- i) Census data is collected on a compulsory, 100 percent basis thereby eliminating the problems of bias and sampling errors associated with other data sources like sample surveys and administrative records (DoE 1980). Sample surveys and administrative records are particularly inadequate for Africa (Kiregyera 1986).
- ii) Because it is a compulsory enumeration, census is able to give data up to the smallest geographical area (Boyle and Dorling 2004) hence data will be available for planning of any local area.
- iii) In Africa, census contributes to the development of national statistical services and to the development of social statistics (Kiregyera 1986).
- iv) The census helps in providing baseline information upon which further and specific research may be based.
- v) Census presents opportunity for time series data that allows for longitudinal analysis, inter-temporal comparisons, trend analysis, change detection etcetera.
- vi) It also helps in the rapid assessment of housing requirement that would guide the formulation of housing policy (DoE 1980).
- vii) The results of the census would also guide the allocation of resources (assuming there are resources to be allocated) both sectorally and spatially; sectorally, when the results indicate the need to allocated more resources to housing and spatially when results indicate the need to allocate more housing resources to particular areas or regions.
- viii) In terms of use, census data would be useful to policy makers in the public sector, private sector decision makers and housing researchers (O'Hare 1992).

The last three points have direct implications for poverty reduction. The objective of rapid assessment of housing requirement is most relevant. It is the objective that would indicate the housing needs of particular regions or particular sections of society. These would then guide allocation of resources and policy making in the housing poverty reduction endeavours.

Limitations of Housing Census

DoE (1980) has pointed out the limitations of the census as an instrument for acquisition of useful housing data to include long interval, finite capacity of data processing, inadequate content and inability to capture information on fitness and disrepair. According to DoE (1980), the census cannot provide direct estimates of unfitness and disrepair. This is not possible under self-enumeration or enumerator-assistance because it requires technical judgment. It would require enumerators who are trained in building construction and maintenance if such data were to be captured.

We have seen that, conventionally, censuses are conducted decennially; although in a number of countries including Japan, Turkey, Australia, Canada and South Africa the census is conducted quinquennially (May and Lehohla 2005). The ten-year intersensal interval is so long especially for dynamic societies. However, the gist of the matter is that whatever is happening in between the years is not captured statistically. Because the census covers every household, only a limited set of questions can be included in the census schedule for ease of data collection, compilation, analysis and dissemination. Another issue concerns the finite capacity for data processing system which has always caused undue delays in the release of census results especially in African countries.

Moreover, as much as it is impossible to separate housing census from population census for the advantages this entails, housing census is limited by this interconnection. First, we have seen that population census with its political objectives, is always marred with political controversy that may easily result into legal action. In the US for example this has forced the Census Bureau to concentrate on fulfilling legal requirements to the detriment of more pressing social and economic statistics (O'Hare 1992). Political interference can take place in other ways too. Briscoe (2000) has pointed out that governments can use its monopoly of statistics to political advantages in various ways like distorting, suppressing or postponing figures that portray its own economic performance unfavourably. It is in this light that Huchzemeyer et al. (2006) have expressed doubt whether governments of developing countries do not deliberately hide or ignore housing poverty through an inadequate portrayal of informal settlements in the official statistics. Lastly, housing has always remained a subsidiary item in the construction and administration of the census instruments.

OVERVIEW OF THE CENSUS OF HOUSING IN KENYA

History of Housing Census in Kenya

Housing census has its roots in population censuses in Kenya. Population censuses in this case can be historically categorized into the colonial and post-colonial. Kenya has the experience of conducting population census six times within a time span of about 50 years. The first census was conducted in 1948 and the last in 1999; the seventh census is

due in 2009. In the colonial era two censuses were conducted one in 1948 and the other in 1962.

In post-colonial Kenya, the census has been held decennially since 1969. Until 1999 the exercise was simply known as Population Census. But in the 1989 exercise a housing component was included to the population census. The housing component was retained in the 1999 census; hence Kenya has only seen one round of decennial census of housing. The 1969 census used the short and long forms, while the 1979 one used a single uniform schedule as was the case with the 1989 and 1999 ones.

Prior to the 1989 census, there was no comprehensive national survey of housing in Kenya. The best attempt that had been made at a comprehensive housing survey was the 1983 Urban Housing Survey that covered 32 urban centers. The housing component was introduced in the Kenyan census because of the failure of the past housing surveys to provide reliable and comprehensive information for planning and management of housing. This is the reason why it was necessary to include questions pertaining to housing conditions and amenities in the 1989 census (CBS 1996).

Census Methodology

Census of Population and Housing is conducted under the statutory provisions of the Statistic Act chapter 112 of the laws of Kenya (Kenya 1982). The Act gives the Director of Statistics power to collect information from households through the census. The task usually begins with the mapping out of enumeration areas. Generally an enumeration area would contain 100 households. Usually after designing the census instruments a pilot survey would be done to test the instruments. This is then followed by actual enumeration and a post enumeration survey (CBS 2001a).

Usually a *de facto* enumeration approach is adopted. In this approach, everybody who is in the country is enumerated according to where she/he spends the night on the census reference date. The 1999 census was conducted using a single schedule that enables information on population and housing to be integrated hence housing data could be related to demographic and other socio-economic characteristics of households (CBS 2002). Other logistic advantages include reduction of the burden on respondents' time and reduction in the cost of census planning and execution. Enumeration is done through enumerator interview. Self-enumeration is not possible due to high levels of illiteracy or semi-literacy.

Clear instructions are given to the enumerators on the caution of neutrality. It says: "Please note that most people are usually polite especially to strangers. They tend to give answers that they think will please the interviewer. It is therefore extremely important that you remain neutral towards the subject matter of interview. Do not show any surprise, approval or disapproval of the respondent's answer by your tone of voice or facial expression" (CBS 2001b). But the instruction is also self-defeating in such a situation of illiteracy. When the enumerator does not show any of these three, it means the respondent's answer is taken as given whether or not it is out rightly wrong. This can apply on demographic surveys but not housing surveys where the enumerator can even

see some things by making own personal observations like source of water. This has led to some blatant errors in the final tabulations as pointed out in K' Akumu (2006).

CBS reports that prior to the 1999 census key users of the housing census data “provided useful contributions to the information most required for assessing housing conditions and formulation of housing programmes” (CBS 2002:5). This is the reason, for example, that the 1999 Census contained two questions about number of dwelling units and rooms per household, which was not considered during the 1989 Census.

Census Objectives

The objectives of the 1989 census that introduced the component of housing to the population census had the following objectives (CBS 1994a):

- i) To provide information on the size, composition and distribution of the population
- ii) To collect information on current trends and levels of fertility, death rates and migration
- iii) To ascertain the current rate and pattern of urbanization
- iv) To determine the size and composition of the labour force
- v) To provide information on social amenities available to the population.

It is unfortunate that the statement of objectives did not recognize housing. Housing is only implied in the last objective on social amenities. This is so because up to this time the architects of the census did not think of housing as a distinct part of it. The 1999 census on the other hand had the following objectives (CBS 2001a).

To collect data on:

- i) composition and spatial distribution of the population
- ii) levels of education attained by population
- iii) levels of fertility, mortality and migration rates
- iv) the rate and pattern of urbanization
- v) the size and utilization of the labour force
- vi) housing conditions and availability of social amenities.

The last objective indicates that the 1999 census went a step to mention housing as its data objectives despite the prominence of population objectives. The 1999 also had the appropriate title: Population and Housing Census. This was the first time housing was being recognized as part of the traditional population census. Special note should be taken of the fact that the 1989 census introduced the housing topics into the census but its title remained as Population Census.

CENSUS OF HOUSING TOPICS FOR KENYA

The UN-recommended census of housing topics is used as the framework for the evaluation of census of housing topics in Kenya. Table 1 represents the range of topics and extent of their coverage in Kenya.

Table1: UN recommended housing census topics and coverage in Kenya

Unit of Enumeration	UN-Recommended Topics	Kenyan Coverage
Building	1. Building - type of	Not covered

	2. Construction material of outer walls 3. Year or period of construction	H13-H15 Not covered
Living Quarters	4. Location of living quarters 5. Living quarters - type of 6. Occupancy status 7. Ownership - type of 8. Rooms - number of 9. Floor space - useful and/or living 10. Water supply system 11. Toilet and sewerage facilities 12. Bathing facilities 13. Cooking facilities 14. Lighting - type of and/or electricity 15. Solid waste disposal - type of 16. Occupancy by one or more households 17. Occupants - number of	Covered Covered Not covered H12 H11 Not covered H16 H17 Not covered H18 H19 Not covered Not covered Covered
Households/occupants of living quarters	18. Demographic and economic characteristics of the head of household Age Sex Activity status Occupation 19. Tenure 20. Rental and owner-occupied housing costs	P12 P11 P30 P30 H12 Not covered

Source: Constructed with information from UN (1997) and CBS (2001a/b).

Part D of the census questionnaire has the entries for housing but other topics are also covered within the whole questionnaire giving credit to the use of a uniform schedule. The range of topics starts with the building type. This topic, classified under Building, is not covered in Kenya. A building type, for residential purposes, refers to the type of structure; that is, whether it the unit is attached or detached or storeyed and for that matter single dwelling or multi dwelling. This however may not be so much relevant in housing poverty indexing.

The second topic: construction material of outer walls is covered, see H13—H15. For the Kenyan census more of the materials on housing elements are included for floor and roof which is good. The topic on year of construction, however, is not touched. This would be a very good indicator for the stock of housing produced in each year which can be contrasted with annual rate of household formation to know the gap in housing shortfall. This is very important for the quantitative aspects of housing poverty although it may not be useful where renters are concerned.

Under the Living Quarters, the topic of location may be derived from the entries on province, district, division, location and sub-location. These are administrative locations which have no urban reference while housing poverty is known to be acute in urban areas. For housing purposes, these have been criticized for hiding the geographical identity of the urban phenomenon of informal settlements (K' Akumu 2006).

Type of living quarter is another recommended topic that has been covered. It corresponds to 'household type' in the Kenyan census questionnaire. CBS (2001a/b) divides households into conventional and non-conventional. Non-conventional households involve groups of persons who live together but cannot be said to belong to an ordinary household with examples like hospitals, schools, colleges, barracks, prisons et cetera. But the UN's scope of the living quarters go beyond this to include structure details like whether it is a conventional, temporary, mobile or marginal housing units. The UN classifies informal settlements under marginal housing units and defines the marginal units as 'those units that do not have many of the features of a conventional dwelling and are generally characterized as unfit for human habitation' (UN 1997:103). A classification of dwelling units is therefore necessary in Kenya for portraying the informal settlements or non-conventional hence inadequate housing.

The topic on occupancy status refers to whether a conventional dwelling is occupied or vacant at the time of the census. This information may be useful in demonstrating which geographic region or housing classes (low, medium or high income) are oversupplied. Unfortunately, it would be impractical to capture it in a population and housing census because the census is based on households. In this case where households do not exist, no information is collected. The topic of ownership on the other hand is related to that of tenure and is adequately catered for in the Kenyan census questionnaire on tenure status. Tenure will tell us homeowners and renters and give the distribution of capital wealth in housing. From these distributions we can infer gender, racial and some other disparities in housing wealth distribution.

The topic on number of rooms is also covered for Kenya under H11. Number of rooms can be analysed against household size to give an indication of overcrowding that then demonstrates degree of housing inadequacy. Where conventional housing is concerned, the number of rooms is sufficient unit since the rooms are subject to certain minimum size standards. But where informal settlements are concerned, the rooms are not built to any minimum standards hence the need of a different measure in this case the UN-recommended topic on floor space. In Kenya, this topic is not included and should be included. The topics on water supply system and sewerage facilities are well covered under H16 and H17 for Kenya. Bathing facilities on the other hand is not covered as recommended by the UN. But in this case it is not a critical indicator of housing poverty. Cooking and lighting facilities are also well covered in H18 and H19.

Under the living environment one critical recommended topic that is not covered by the Kenyan census is the method of solid waste disposal. This is a very important indicator of the level of solid waste pollution which is a characteristic problem of informal settlements. Another aspect that is not covered is the topic on occupancy by one

household or more. This is an indicator of overcrowding especially when one dwelling unit is occupied by more than one household. The number of occupants as required under recommended topic 17 on the other hand can be summed up from the household totals in the census questionnaire.

Concerning occupants of living quarters, their demographic and economic characteristics such as age, sex, and occupation can be derived from the parts A and B of the census questionnaire covering population aspects. One pertinent topic is that of rental and owner-occupied housing costs. The consumption of housing can also induce other forms of poverty for example if a household is spending more of its disposable income on housing, it remains with less to purchase other goods and services such as clothing, food and healthcare thereby compounding its poverty status. Data on housing expenditure is therefore necessary so as to reflect this and as explained in the introduction under demand factors.

The Kenyan questionnaire also has a slot on the dwelling units regarding how many dwelling units the household occupies (H10). This is the addition brought about in the improvement of the contents of housing topics for the 1999 census. But the practical importance of this information is not quite apparent. This information may not be necessary at this stage hence the slot could be given to more pertinent questions.

Generally, the census in Kenya covers certain vital topics as recommended by the UN and as necessary for the monitoring of housing poverty. But at the same time, it does not cover others that are equally vital as pointed out in the foregone discussion. These therefore need to be included in the census so as to improve its strategic position as an instrument for the monitoring of housing poverty.

REPORTING CENSUS OF HOUSING IN KENYA

The Population and Housing Census of Kenya is usually reported at two levels; the general and the analytical reports. The general reports are usually in two volumes. Volume I of the 1999 census for example gives statistics on population distribution by administrative areas age sex and urban centers. Volume II on the other hand presents basic results on educational attainment, labour force participation, type of housing and source of water. The analytical reports on the other hand present statistics on specific social and economic aspects of the population. There are nine analytical reports on various aspects including analytical report on:

- i) population dynamics
- ii) fertility and nuptiality
- iii) mortality
- iv) migration and urbanisation
- v) population projections
- vi) education
- vii) labour force
- viii) housing conditions and household amenities
- ix) gender dimension

Census data is reported according to administrative regions namely provinces and districts. There are eight provinces: Nairobi, Coast, Central, Eastern, Northeastern, Rift Valley, Western, and Nyanza. The provinces are divided into smaller administrative units known as districts. The district is the local planning level of the central government. It is also the main stop point for policy implementation of the central government. Urban centers fall under specific districts hence there is no specific data for them. Their data is subsumed in the district one that combines both urban and rural areas. It is only Nairobi and Mombasa that have not suffered this fate thanks to being a one province and one district town respectively.

K' Akumu (2006) pointed out that aggregation of data according to districts camouflages the acute housing problems in urban areas. The CBS has admitted of the 1999 census that their analysis could not be undertaken to the level of slums/informal settlements because the enumeration areas that fall within these settlements were not uniquely coded during the mapping exercise (CBS 2002). This is an indication that housing is not given proper attention in the census design and execution since the critical elements that require immediate development intervention like spatial location of informal settlements are not given priority.

The 1989 Census did not produce a general report; its volume two report was on urbanization which was the main theme of the census (CBS 1994b) and what more, they had not intended it to be a housing census. For the 1999 Census, volume II is dedicated to socio-economic profile of the population and gives details on housing conditions and amenities. Tables are available for the number of households by:

- i) main type of roof materials for the main dwelling unit
- ii) by main type of wall materials for the main dwelling unit
- iii) by main type of floor materials for the main dwelling unit
- iv) by main source of water

For i), statistics are given in terms of number of households and percentages for type of roof materials: iron sheets, tiles, asbestos, grass, makuti, tin, and other. These statistics are banded for the whole of Kenya and for provinces. Under each province save Nairobi, figures are disbanded into districts.

For ii), statistics are given in terms of number of households and percentages for types of wall materials: stone, brick/block, mud/wood, wood only, iron sheets, grass/reeds, tin, and other. The banding and disbanding of statistics are repeated as in i).

For iii), statistics are given in terms of number of households and percentages for type of floor materials: cement, tiles, wood, earth, and other. The banding and disbanding of statistics are repeated as in i) and ii).

For iv), statistics are given in terms of number of households and percentages for main source of water: pond, dam, lake, stream/river, spring, well, borehole, piped, jabis/tanks. Jabis is said to refer to "rain water harvested from any catchments into a hole/tank and

used for domestic purposes” (CBS 1996). The banding and disbanding of statistics are repeated as in the rest.

The next section presents a detailed review of the analytical reporting of the census of housing in Kenya.

ANALYSIS OF INDICATORS

Household Characteristics

The analytical report considers household data which was not part of the housing census data but, as has been noted, this is the advantage of enjoining population census with housing census. The analytical report for 1999 Census, for example, gives us tabulation of household heads by sex; so we could isolate female-headed households from male-headed ones. The discernible intention is to portray **gender related vulnerabilities arising from housing needs**. This is commendable but analysis according **to age** is also necessary so as to isolate **child-headed households**. The 1989 analytical report came closer to this by giving tabulation on median age for household head by district. However, it would be useful to distribute households according to actual ages or age cohorts of household heads. The 1999 report also gives tabulation of rates of household formation, which would be useful in the projection of housing needs especially in urban areas. The report renders a discussion of household sizes but no tabulation is given.

Accommodation Size

The report considers accommodation characteristics in various attributes. Tabulation is available for total number of dwelling units countrywide, urban or rural regions, and provincial and district levels categories. For these categories columns exist for number of dwelling units, as has been said; and for number of rooms, number of households, population figures, rooms per dwelling unit, average household size, average persons per room, and median household size. This tabulation is useful in determining the adequacy of housing in quantitative terms. For example, it is easy to see the level of overcrowding by glancing at the average persons per room. But this statistic is not concise, as it talks of rooms in a dwelling unit that would include kitchen, and living and dining rooms according to census definition. More concise statistics can be found in the tabulation of percentage distribution of households by number of rooms occupied in selected towns. The tabulation takes a range of 1-7 rooms. A 7-roomed house would be a typical 4-bedroomed house with kitchen, living and dining rooms as extra three rooms. The tabulation reveals for example that **66.6 percent of the households in Nairobi live in single rooms**. This is an expression of dire housing need given that the same report found the average household size for Nairobi to be 3.24. Tabulation for the whole country also exists for national and provincial figures with urban and rural bandings.

Housing Tenure

The analytical report for the 1999 Census provides data on tenure status (either owned or rental) for housing according to male- or female-headed households. National and provincial figures are given for these. A detailed tabulation on distribution of households by tenure and number of rooms occupied is also available. The number of rooms range 1-5+ in columns. The numbers of households are given both in absolute figures and in

terms of percentages. Statistics are given in national or provincial bands and according to rented or owned housing in the rows. This is a complex cross-tabulation that gives useful comparative information regionally (urban or rural) and provincially. Housing tenure as has been noted under census topics, provides a vital indication of the geographical and social distribution of housing wealth or lack of it (poverty).

Construction Materials and Social Amenities

Construction materials can give a rough indication of the quality of housing. For example if the floor is made of earth material it is a clear indication of inadequate housing. Also building materials have been standardized in the building codes hence they make it easy to determine shelter that meet set standards or not. The report presents tabular analysis of materials used in the construction of main dwelling house. This is in terms of percentage distributions of households by roof materials, by wall materials, and by floor finish for selected urban areas: Nairobi, Mombasa, Nakuru, Kisumu, Eldoret, Thika, Ruiru, Nyeri, Malindi, and Kakamega.

For social amenities, tabulations are given in terms of percentage of households by:

- i) Two main sources of water (piped and boreholes) in selected towns
- ii) Two main types of human waste disposal facilities (main sewer and pit latrines) in selected towns
- iii) Two main type of lighting fuel (electricity and paraffin) in selected towns

Energy consumption statistics are not presented at all in the general report. They are only presented in the analytical report. Apart from iii) above, there are tabulations on: Distribution of households by main type of lighting fuel by province and distribution of households by main type of cooking fuel. Statistics are given for national, regional (urban and rural), and provincial categories. Both tabulations also give the 1989 alongside 1999 data that is useful for time series comparison. The availability or not of these amenities have implications for the environmental conditions of housing and hence housing poverty.

Housing Quality Index

There has been an attempt to construct a multiple criteria housing quality index under the chapter on Consolidated Approach to Housing Quality both in the 1989 and 1999 analytical reports. This is intended for analyzing the housing situation in the country and as an indicator of the standard of living of the population. The 1999 census analysis has used a consolidated quality matrix for housing and related amenities (CBS 2002). The quality matrix includes variables on construction materials and basic social amenities. The variables are given score that are consolidated for every household as shown in Table 2. The Numbers in each table column save the first represent the materials as coded in the questionnaire, see appendix. Since they are seven items, the top consolidated score (score 1 for each item) would be 7, while the lowest score (score 5 for each item) would be 35. The consolidated scores are thereafter ranked and then aggregated. Ranking is done as follows: 1, for scores 7-11; 2, for scores 12-16; 3, for scores 17-21; 4, for scores 22-26; 5, for scores 27-31 and; 6, for scores 32-35. Rank 1 has the attribute of high quality housing; 2, good quality; 3-4, average quality and; 5-6, poor quality.

Table 2: Housing quality scores

Score	Roof	Wall	Floor	Water	Sewage	Cooking	Lighting
1	2 and 3	1 and 2	2	8 and 9	1,2 and 3	1	1 and 6
2	1 and 4	4 and 5	1	5	4	6 and 3	2
3	5 and 6	3	3	6 and 7	5	2	3
4	7	6 and 8	4	4 and 3	6	5	4
5		7		2 and 1		4	5

Source: CBS (2002) p. 42.

The results of these scores are unbelievable. They indicate that only 0.6 percent of urban households live in poor quality housing, with a majority of 66.2 percent enjoying high to good quality housing; quite an incredible picture for a country where over 60 percent of the urban population live in informal settlements. With results like who needs to bother about improving urban housing conditions in the country. The same report under table of Households with Number of Rooms indicates that 58.9 percent of households in urban areas live in single rooms (CBS 2002: 19). All these rooms are most likely to be found in informal settlements where housing conditions are known to be inadequate. The ranking requires serious revision to reflect the actual housing conditions of the population. As it is now, it is quite skewed to reflect good housing conditions.

Homelessness Index

Homelessness is the extreme case of housing poverty, as noted earlier. The analytical report on housing considered a homelessness index for urban centres in Kenya. In the analysis, homelessness index was expressed as: ‘the number of people per thousand of the urban population who sleep outside dwelling units’ (CBS 2002: 13). The analysis reported low rates (an average of two homeless persons per thousand) of urban population in Kenya, noting that high rates of homelessness were recorded in transit towns. This is because those who were traveling hence were not spending the night at home were captured as homeless persons. This is an inaccurate position and brings to question the method of census used in Kenya.

As has been noted, Kenya uses the *de facto* enumeration. This is in contrast to the *de jure* method used in other countries such as Israel whereby household members are enumerated according to their recent or permanent residences (Kamen 2005). The *de facto* method could be suitable for population census especially where the objective is just to count in the stock taking way by freezing everything just to establish how many there are. However, this method is not ideal for a housing census such that anybody who did not spend in a dwelling on the night of the census is considered as homeless regardless of the reasons for being without a dwelling such as traveling overnight. In this case a *de jure* census is appropriate since it would establish who lives where even if that person is not present on the night of the census.

CONCLUSION

The paper has taken a comprehensive look at the organization and execution of the decennial census of housing in Kenya. The main objective is to assess its suitability as a

strategy of information gathering for purposes of understanding and monitoring the magnitude and character of housing poverty in the country. It in deed presents great potential for monitoring housing poverty in these respects given its longitudinal character that creates potential for the build up of time series data. Nevertheless, it is also characterized by certain shortfalls especially concerning census topics reporting and analysis.

The topics covered by the census of housing in Kenya fall short of the UN-recommended census topics particularly concerning topics that have serious bearing on the character and magnitude of housing poverty. These have been discussed in detail and appropriate recommendations made for each case. Likewise, in the analysis and reporting of census results, certain shortfalls have been pointed out and recommendations made with the objective of making the census exercise more suitable for portraying housing poverty in Kenya.

By portraying housing poverty more accurately and hence enabling policymakers and investors to make informed decisions, housing poverty would be effectively reduced. The reduction of housing poverty on the other hand would contribute to poverty reduction in general. In this way, the decennial census of housing in Kenya could form an effective strategy for poverty reduction. But the Kenyan situation is not different from that of many developing countries in the world. The housing poverty situation is common to developing countries (Aldrich and Sandhu 1995; Pugh 2001). In this case, the Kenyan feat can be replicated in other developing countries where census of housing can be utilized as a primary strategy for poverty reduction.

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