

## Problematic polygamy: implications of changing typologies and definitions of polygamy | *Une polygamie problématique : les répercussions de l'évolution des typologies et définitions de la polygamie*

Ernestina Coast (LSE), Sara Randall (UCL), Valerie Golaz (INED-IRD/CEPED), Bilampoa Gnomou (ISSP)

### Abstract

The persistence or decline of polygamy<sup>1</sup> is often used as an indicator of social change in Africa and elsewhere (Hern 1992). However, most data and researchers use the term “polygamy” without reflecting on what is being measured. Thus, international comparative research often ignores temporal and spatial differences in the conceptualisation of polygamy, and the implications for subsequent analyses. We use three different approaches in order to uncover the implications of these different understandings of “polygamy”: 1) analysis of definitions used in Anglophone and Francophone surveys and censuses post-1950. 2) interviews with key informants involved in the production and consumption of survey and census data. 3) secondary analyses of large-scale datasets, including: DHS for Senegal, Uganda, Tanzania and Burkina Faso and the census for Mali.

### Context

Change in nuptiality generally reflects important social transformations (Antoine 2002). Polygamy, whether formal or informal, de jure or de facto, is an important and persistent union type in some countries and regions in sub-Saharan Africa. It is the region of the world where polygamy is the most prevalent, although it is also practised elsewhere in parts of Southeast Asia and the Middle East (Bledsoe and Pison 1994; Ezeh 1997; Caldwell and Caldwell 2002). Current prevalence of polygamy ranges from 53% in Guinea (2005) to 21% in Rwanda (2005) (STATCOMPILER 2011<sup>2</sup>), refuting the prediction (Goode 1970) that polygamy would disappear or reduce substantially as a result of social change towards a nuclear family type (Peterson 1999). The persistence or decline of polygamy is frequently used as a proxy of social change in African society, reinforced by the fact that the prevalence of formal polygamy is generally lower in urban than rural areas (Dodoo 1998).

The persistence of polygamy – and the rise of “new” forms of polygamy – means that demographic data might not reliably reflect unions in which people live. Several authors have suggested that “formal” polygamy might instead be being replaced by “informal” polygamy (Meekers 1992; Bledsoe and Pison 1994; Karanja 1994). Terminologies such as “private polygyny”, “outside marriage” or the *deuxième bureau* (Bledsoe 1993; Karanja 1994; Mann 1994) reflect these changing unions. In some countries, such informal polygamy might be a response to changing legal settings, where formal polygamy has been outlawed (e.g.: Cote d’Ivoire, Eritrea, Benin) or migration to European countries where polygamy is illegal.

In settings where polygamy has traditionally been practised, there appear to be shifts in the nature of who is entering polygamous unions with, for example, in Mali a shift towards divorcees and widows being most likely to enter into polygamous unions, (Hertrich 2006). The meanings of polygamous unions, for those people involved in them, are also changing – as shown by qualitative work from South Africa (Mbatha 2011). The emergence of “new” forms of union is not restricted to sub-Saharan Africa, with emergence of the second wife phenomenon noted in southern China (Lang and Smart 2002), and de facto polygamy in countries where it is not traditionally (or necessarily legally) practised – as a result of migration: e.g. USA (Hassouneh-Phillips 2001).

### Polygamy and demography

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<sup>1</sup> Note: Strictly speaking, the term polygyny refers to the situation where a husband has more than one wife. Polygamy refers to the situation where a husband or wife has more than one spouse. However, because the term is used more frequently in the literature (to refer to polygyny) the term polygamy is used here in this paper.

<sup>2</sup> Based on proportion of currently married women reporting no co-wives. <http://www.statcompiler.com> (Accessed 23/ 06/ 11)

The supports for polygamy have been studied extensively, in a variety of sub-Saharan African settings (Pison 1986; Romaniuc 1988; Lesthaeghe and al 1989; Pebley and Mbugua 1989; Antoine and Nanitelamio 1995; Klissou 1995; Marcoux 1997; Timaeus and Reynar 1998) (Falen 2008) (Garenne 2001). Polygamy is associated with a variety of macro-level factors (Timaeus and Reynar 1998) including: kinship groups where women undertake most of the subsistence agriculture; when a large family provides both labour and physical security; where women engage extensively in trade (Lesthaeghe and al 1989); in societies with limited social stratification (Clignet 1970); and in societies where traditional belief systems rather than formal religion are dominant. However polygamy is also found in contexts where these macro-level factors are largely absent.

The effects of polygamy on demography have been studied extensively (Ezeh 1997; Kiros and Kertzer 2000; Josephson 2002; Lardoux and van de Walle 2003). Polygamy is generally accepted to raise fertility at the population level (Pison 1986; Fulton and Randall 1988; Pebley and Mbugua 1989), and other demographic consequences of polygamy include increased spousal age difference and reduced coital frequency (Brainard 1991; Lardoux and van de Walle 2003); high frequency of widowhood (Lesthaeghe and al 1989; Timaeus and Reynar 1998); and, the promotion of prolonged breastfeeding and sexual post-partum abstinence (Timaeus and Reynar 1998).

### **Polygamy and social change**

Transformation of marriage regimes are a key dimension of social change. Clearly it is difficult to understand the basic demography of the transformation of marriage regimes without good (and clear) data on the phenomenon – hence the preoccupations above. Missing from the literature is a detailed discussion of the typologies of polygamous unions, moving beyond a simple description of prevalence and intensity, represented by the number of wives per man (Timaeus and Reynar 1998). If we are to understand the social transformations that changes in nuptiality represent, we need to better describe, and understand the implications of, all forms of unions including polygamy. Most research ignores the multiple forms of polygamous unions, for example, wives co-residing with the husband in the same compound, wives living separately from each other and visited periodically by the man, and arrangements where some wives are formally married to the man and others are not.

Failure to understand and then reflect these typologies in surveys and censuses means that analyses ignore the lived realities of many people. For example, survey data collection that “detach” co-wives from each other will artificially inflate the levels of female-headed households and decrease average household size (Leone, Coast et al. 2009). In settings or populations where polygamy is widely practised, this means that data are at best inaccurate.

Are data and analyses of economic and social well-being misrepresenting the reality of polygamous unions? Our analyses show how the incorporation of more nuanced understandings of polygamy, including “new” forms of polygamy, can improve the collection and interpretation of data.

### **Polygamy and data collection**

Most research, data and literature, use the term “polygamy” as a non-problematic concept. In particular, international comparative research tends to ignore national and regional variations in the reality and conceptualisation of polygamy in the data and the implications of different forms of polygamy on living arrangements and household membership and the implications for analyses that include polygamous populations. The practical and definitional issues caused by polygamous unions for surveys and censuses have been well-noted:

“Polygamous households can present problems depending on whether each wife is treated as a separate household or as part of one large household. If the former it will be necessary to apply an **arbitrary** rule (such as linking the head-of-the-household to the first wife) to avoid double-counts.”  
Adjustment Integrated Survey (World Bank ) (Delaine, Hill et al. 1992)<sup>3</sup>

"in some polygamous societies a man may have several wives, each of whom has a separate dwelling. In this case each wife (and her children) constitutes a separate household. Which household the man belongs to is difficult to say. In this and other unusual cases flexibility is needed; one course of action is to adopt the definition of a household used in previous surveys in the particular country. An important principle to follow in these situations is that each person in the population should be assigned to one, and only one, household."

(Grosh and Glewwe 2000) p136

If we focus on the final sentence of this quote “that each person in the population should be assigned to one, and only one, household”, we can see that this statement is at odds with many of the forms of living arrangement that accompany polygamy (whether formal or informal). If the determining principle is to assign each person to only one household, and wives are separated out from their husband, then households will not reflect how people organise their socio-economic and living arrangements.

Instructions for census enumerators tend to show explicitly how to deal with polygamous households, as these examples from Kenya show:

“List members of the nuclear family, starting with the head and his wife and children beginning with the eldest and working down to the youngest. If the head has more than one wife, living in the same house list the first wife and her children followed by the second wife and her children.”

(Kenya 1989)

“In a polygamous marriage, if the wives are living in separate dwelling units, and cook and eat separately, treat the wives as separate households. Each wife with her children will therefore constitute a separate household. The husband will be listed in the household where he will have spent the CENSUS NIGHT. If the wives eat together and live in the same dwelling unit, then treat them as one "household"

(Kenya 1999)

In the following example from Malawi, a rather different approach to that of Kenya and Tanzania is taken, and the issue of proximity (not specified or defined) becomes relevant:

“You must be cautious and use the criteria provided on household membership to determine which individuals make up a particular household. In the case of polygamous men and extended family systems, household members are distributed over two or more dwellings. If these dwelling units are in the same compound or nearby (but necessarily within the same Enumeration Area) and they have a common housekeeping arrangement with a common household budget, the residents of these separate dwelling units should be treated as one household.”

(Malawi 2004)

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<sup>3</sup> This is a remarkably good document that appears never to have been referred to since by the World Bank

One of the most important sources of survey data on households and marital unions for many low income countries are the Demographic and Health Surveys. The most recent (2011) DHS interviewer manual defined as household as:

“By definition, a *household* consists of a person or group of persons, related or unrelated, who live together in the same dwelling unit, who acknowledge one adult male or female as the head of household, who share the same living arrangements, and are considered as one unit. In some cases one may find a group of people living together in the same house, but each person has separate eating arrangements; they should be counted as separate one-person households.” (p.15)

This manual provides examples to show interviewers how to deal with practical issues:

“Sometimes, it is not easy to know whom to include in the household and whom to leave out. Here are some examples:

A) A woman lists her husband as head of the household, but he lives somewhere else. If he does not usually live in the household you are interviewing, and he did not sleep there the previous night, he should not be included in the listing.

B\_ Sometimes, people eat in one household and sleep in another. Consider the person to be a member of the household where he or she sleeps.”

Both the examples used here raise issues and implications for polygamous unions. Example (A) detaches polygamous men from every wife apart from the one that he slept with the previous night. In situations where the man maintains his own dwelling, and each wife has her own dwelling, he would not be listed with any of his wives if he slept in his own dwelling the night before. Example (B) ignores the issue that a polygamously married man is likely to sleep in different houses at different times. Most design concerns appear to focus, however, on the issue of avoiding double-counting – essential for a complete census enumeration, but rather less important in a sample survey

“Some experts alluded to the issue of polygamous families and problems it raises when defining usual place of residence and requested that specific recommendations be included on the topic to avoid double-counting”

(Department of Economic and Social Affairs Statistics 2006)

## **Research questions**

Our paper addresses three questions. Firstly, how do systems for data collection (e.g.: survey, census) define polygamy, if at all, and how have data definitions, typologies of polygamy and the way data are collected on polygamous unions changed over the last half century? Secondly, how do these data represent populations in polygamous marriages? Thirdly, what are the implications of these different definitions for our understanding of polygamous populations?

## **Methodologies**

We answer these questions using a multi-method approach. Firstly, a review of the definitions used in surveys and censuses in Anglophone and Francophone Africa since the mid-Twentieth Century reveals changing constructions of polygamy and data on polygamy over time and countries in survey and census data, with divergent approaches in Anglophone and Francophone Africa. These divergences have implications for the validity of international comparative work that focuses on polygamy. The second method is based on interviews with key informants, in particular, the commissioners and producers of data in Tanzania, Burkina Faso and Uganda. Analyses of these interviews indicate how polygamous households and families are constantly highlighted as a key problematic situation for the collection and production of data. The third method involves secondary analysis of a widely used international data source – the Demographic and Health Surveys in four countries (2 Anglophone – Tanzania and Uganda and 2 Francophone – Burkina Faso and Senegal), together with analyses of the Malian census (which with its

large numbers allows a much more detailed exploration of herogeneity than a DHS). These analyses consider the implications of different definitions and conceptualisations of polygamy for our understanding of how this union type is changing across Africa.

## Results

### 1. Evolution of definitions

We analyse how data about polygamy have (not) been collected in each of the five study countries by examining in detail the survey and census materials (questionnaires, interviewers' handbooks and training materials) for DHS surveys and census. In particular, we focus on how the questions are articulated, and consider the implications for the data that might be produced. A detailed summary of the way in which DHS surveys ask questions about polygamy have evolved since the 1980s is included in Appendix B. Table 1 summarises the main trends in the ways in which data about polygamous unions are collected for both census and DHS survey in each country.

Table 1: How data are collected about polygamous unions, Burkina Faso, Mali, Senegal, Tanzania, Uganda, for censuses and surveys (1960s-present)

Country	Census: polygamy	Census: household	DHS household	Comment	Legal status of polygamy
Burkina Faso	Un homme marié à plusieurs femmes (polygame) vivant dans la même concession et leurs enfants non mariés constituent un ménage <sup>4</sup>	une unité socioéconomique de base au sein de laquelle les différents membres (apparentés ou non), vivent ensemble dans la même maison ou concession, mettent en commun leurs ressources et satisfont en commun à l'essentiel de leurs besoins vitaux. Ils reconnaissent en général l'autorité d'un des membres du ménage en tant que chef de ménage, indépendamment du sexe de celui-ci. [economic unit within which the various members (related or not) living together in the same house or concession, pool their resources and meet together to most of their basic needs. They generally recognize the authority of a household member as head of household, regardless of gender <sup>5</sup> ]	à une personne ou à un ensemble de personnes qui vivent et qui mangent généralement ensemble  Un homme qui a deux épouses vivant dans des endroits différents et qui vit avec chacune d'entre elles. Vous devez demander où il passe le plus de temps et le considérer comme appartenant à ce ménage. <sup>6</sup>	a polygamous man, which is an economic unit with his wives and lives in the same concession with them, constitutes a household. However, for DHS, a household is a person or a group of people who live and usually eat together. Thus, as in the census, many women of the same husband living together and sharing the same meal is a single household. However, according to the definition of the household of DHS, if the women of one man live together and do not share the same meal (even if the resources come from the same source), they constitute separate households.	The practice of polygamy is very old in Burkina Faso. It is an accepted practice by customary law and tolerated by the civil law. The code of persons and the family of Burkina Faso (articles 232 and 258) recognizes monogamy as the form of common law marriage, but states that polygamy is allowed if there is a declaration by the spouses before the marriage.
Mali	1976: Demander à chaque personne de 12 ans et plus si elle est mariée actuellement. Sinon C/ V/D Si oui mettre M1 pour tout homme marié à une seule femme et toute femme ayant fait un mariage (qu'elle s'y trouve encore ou pas) L'indice de M indique soit -le nombre d'épouses d'un homme marié	1976L C'est un group social constitué en général d'un homme de son épouse ou de ses épouses, aussi que de ses propres enfants et eventuels dependants non mariés (célibataires). Le ménage est différent de la famille élargie	TBC		SIDE POINT: in Mali if men get married in the registry office they can sign for either the polygamy or the monogamy option. However

<sup>4</sup> Burkina Faso (1990), *Code des personnes et de la famille*, Ouagadougou, 224 p.

Burkina Faso, Institut national de la statistique et de la démographie (INSD), Direction de la démographie (2000), *Analyse des résultats du recensement général de la population et de l'habitation de 1999*, volume II, Ouagadougou, 180 p.

<sup>5</sup> Ref: Bilampo London HHMM

<sup>6</sup> Burkina Faso, Ministère de L'économie et des finances, Institut national de la statistique et de la démographie, Macro International (2003), *Enquête Démographique et de Santé, Burkina Faso, 2003*, Ouagadougou / Calverton, 455 p.

	<p>- le nombre de mariages contractés (quelle soit actuellement mariée, divorcée ou veuve)</p> <p>This is actually very ambiguous. It seems to imply that even if a woman is divorced, because she has been married she must be put as M2 (if has been married twice). This seems to contradict the first part of the instructions which say to record if currently divorced or widowed. By the subsequent census this ambiguity has been resolved. NB: no definition of marriage, polygamy. However if a man is currently married to two wives one of whom is not here then he is M2 – specifically gives instructions about when she is not here</p> <p>1987: Dans un ménage polygame, dont toutes les épouses ne vivent pas dans la concession du mari, celles vivantes dans une concession différente de celle du mari seront recensées comme chef de ménage avec les personnes qui vivent avec elles. Celle chez qui l'agent recenseur trouvera le mari sera recensée avec ce dernier avec les personnes se trouvant avec eux</p> <p>1998: Dans un ménage polygamique où toutes les épouses ne vivent pas dans la concession du mari, on retiendra que celles vivant dans une concession différente de celle du mari seront recensées (comme chefs de ménage) avec les personnes qui vivent avec elles. Celle chez qui l'agent recenseur trouvera le mari, sera recensée avec ce dernier avec les personnes se trouvant avec eux.</p>	<p>1987 : Le ménage est un groupe d'individus apparentés ou non vivant sous le même toit sous la responsabilité d'un chef de ménage dont l'autorité est reconnue par tous les membres. Le ménage ordinaire est constitué par un chef de ménage, son ou ses épouses et leurs propres enfants non mariés et éventuellement d'autres membres de la famille ou de personnes sans lien de parenté.</p> <p>2009 : Ménage including 'cas particuliers' of polygamous women living separately – identical to 1998</p>			<p>they are taken away to do it and the wife doesn't know what they have signed.</p>
Senegal	TBC	TBC	TBC	TBC	TBC
Tanzania	Not collected in 2002	<p>1967(United Republic of 1969): The primary unit of enumeration was the person. The unit of enquiry was the household. A 'private household' was defined as a group of persons living together and sharing the living expenses. It would usually consist of husband, wife and children, but other relatives, boarders, visitors and servants were also included, if they were present in the household on census night.</p> <p>1978(United Republic of 1982): "A private household is a group of persons who live together and share their living expenses. Usually this means husband, wife and children. Other relatives, boarders, visitors and servants, must be included as members of the household, if they were present in the household on census night. If one person lives and eats by himself, then he is a one-person household even if</p>	<p>a household was defined as a person or a group of persons, related or unrelated, who live together and share a common source of food</p>	<p>It is interesting to note that, compared with the census and DHS, a more detailed approach is used in defining polygamous households in the Tanzanian Household Budget Survey(United Republic of 1993): "The husband and wife or wives may have separate houses and also have their meals separately. In such cases we nevertheless count husband + wife or wives + children as one household, if they pool their resources and live in the same cluster and if they live within easy walking of each other, so that the interviewer can interview at both houses at the same time of one interview. A wife living in a different cluster from her husband will be counted as a separate household with her children."</p>	

		<p>he stays in the same house as other people. ... Family members staying in more than one house, however close together they may be, will be included in the same household if they live and eat together."</p> <p>1998(United Republic of 1991): "The concept "household" is based on the arrangements made by persons, individually or in groups, for providing themselves with food and other essentials for a living. According to the 1988 Population Census of Tanzania, a "private household" was defined as a group of persons who live together and share their expenses. Usually this type of household includes the husband, wife, children and other relatives. Visitors and servants were also included as members of the household if they were present in the household on the census night.</p> <p>2002(United Republic of 2003): Household members staying in more than one house were enumerated as one household if they ate together."</p>			
Uganda	<p>Prior to 2002, marital status coded in only 4 categories:</p> <ul style="list-style-type: none"> <li>- Never married</li> <li>- Currently married</li> <li>- Divorced/separated</li> <li>- Widowed</li> </ul> <p>Polygamous = "if a man has two or more wives"</p> <p>Questions about polygamy introduced in 2002 census</p> <ul style="list-style-type: none"> <li>- Never married</li> <li>- Currently married (monogamous)</li> <li>- Currently married (polygamous)</li> <li>- Divorced/separated</li> <li>- widowed</li> </ul>	<p>Polygamous households are split into smaller households unless they are coresident (in the same compound) <b>and</b> meals are shared</p> <p>A household is defined as a group of persons who normally live and eat together. Very often the household will be a family living in the same house or compound and eating together. A household will normally consist of a man, his wife and children and sometimes relatives and maids. The following constitutes a household:</p> <p>(i) A household may consist of one person who lives and eats on his or her own.</p> <p>(ii) A household may consist of several persons who are not related to each other. What matters is that they live together in the same house or compound and eat together.</p>		<p>since 2002, in Uganda, information on polygamy is generally available, though not in a very precise way. In all cases, polygamy is taken into account only in reference to current marriages/unions. We cannot be sure how separated or deceased spouses are taken into account when there is another on-going union/marriage. And when a female respondent is widowed, do we know whether she has any co-wife? All these however have implications on the sharing of resources and support within the family.</p> <p>"where a man and a woman are co-habiting, they should be regarded as married if they regard themselves to be so."<sup>8</sup></p>	

		(iii) If a man has two or more wives and they and their children live and eat together, they form one household. If the wives and their children live and eat separately, they will form more than one household <sup>7</sup> .			
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Comparing across countries, we can see that far more detail is collected on polygamy and numbers of wives / man in Francophone compared to Anglophone African countries. Given the comparative nature of DHS surveys, it is interesting that there is this broad linguistic divergence in the depth of polygamy data collected. We conjecture that this differentiation might be due to two influences. Firstly, less willingness on the part of countries with Anglophone data collection traditions to officially acknowledge the occurrence of polygamy in society in general, relative to Francophone countries (see subsequent quotes about decisions about polygamy questions in Tanzania being “political”). Secondly, that there are regional-level differences in broad living arrangements between East and West SSA, with co-residential compound living arrangements tending to be more prevalent in the West compared to the East.

Our review of the ways in which data on polygamy are collected (Table 1), and the questions asked about polygamy (Appendix B) underlines that although polygamy tends not to be defined per se, most surveys do specifically address the complications of collecting data on polygamous households. However, the approaches and solutions to collecting data on / from polygamous households vary between contexts, meaning that international comparability of data is, strictly speaking, reduced. The avoidance of double counting – essential in censuses, but less important for surveys – takes precedence over data that might adequately represent the realities of polygamous unions. In addition, the instructions (and questions) for collecting data on polygamous unions vary considerably between countries, meaning that many data are not strictly comparable. It is usually very difficult to know if a woman is in a polygamous marriage, particularly for census data (less so for DHS data where the question is specifically asked).

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<sup>7</sup> Compendium Vol. I, 2004. Needs full bibliographic info from VG



## Results 2: Key informant interviews

When key informants were asked which types of people were particularly problematic in terms of collecting and analysing household data, one of the most frequently cited groups were polygamous populations:

“there was a discussion one time...yes, people wrote this question “What is a household?” And then people said “Well, a household is a group of people or individuals who eats from the same pot.” This is because in some communities – like Maasai communities – are polygamous families. So if someone has 3 wives or 4 then we wouldn’t consider that as 1 household but rather where they eat from the same pot, with different wives from different households. That is one of the difficulties when you go to communities that are not, you know, nuclear families.”

Academic, University of Dar Es Salaam

Survey professionals also highlight the issue of polygamy but then often resolved the issue by collecting data in a way that rendered polygamous households down to more conventional, and thereby conceptually manageable “monogamous” units;

“We just said, OK, we’re going to look at one unit: head of household, primary spouse, primary unit of children. So it’s going to be, not, if there are two sets of wives and two sets of kids we’re not going to sample the second set – because in Tanzania it could be common – so it’s really the male head of household along with the first wife, the oldest wife or whoever he’s living with at that time, and the kids of that union or marriage.”

NGO senior personnel planning baseline survey, Tanzania

In Uganda the way polygamous families are taken into account in household surveys and censuses appears to be perceived as non problematic from the point of view of some data producers. The standard UBOS definition of a household leads to the splitting of polygamous families, including those that live in the same compound, on the basis of cooking arrangements:

“There are of course polygamous marriages, somebody you find has 3 wives and 3 families for that matter. So depending on their cooking arrangements, then we determine how many households they are in such an arrangement. But one person can be a household. If you are staying alone and cooking alone, you are a household on your own”.

Data producer, Uganda, 25 Jan 2011

These quotes from our KIIs reinforce the sorts of statements that are made in methodological documents (see examples outlined from (Delaine, Hill et al. 1992; Department of Economic and Social Affairs Statistics 1997; Grosh and Glewwe 2000). The rather arbitrary dividing up of husbands, wives and children, is well-recognised by those people who are involved in designing and collecting data, as examples from several countries show:

*Burkina Faso: “it’s a nightmare” / “c’est un cauchemar”*

In this example, the KI underlines that the reality of a polygamous union may mean that – even when not co-residing – the wives of a polygamous man may well still constitute an economic unit and a social entity. For example, wives may share the same resources:

R : C'est ça les, les 2<sup>ème</sup>s bureaux, les tr, les...bon, les, les, les ménages, polygames, souvent toutes les femmes ne sont pas dans le, dans la même concession... Il [the husband] est partout. Il est dans les 3 ou 4... En tout cas c'est... c'est un cauchemar. Dans le cas d'espèce, c'est vraiment difficile de séparer ces..., ces unités là, parce que tout le monde mange de, dans, dans ce même grenier.

Q : donc économiquement c'est, c'est une unité.

R : économiquement c'est, oui économiquement c'est une unité. Economiquement, et même socialement

(femme démographe, employée d'une institution internationale).

### *Uganda*

An academic user, with an experience of data collection, has noted the difficulty of fitting this cooking pot definition to fluid relationships

I: And in all your different field research experience, have you ever been in a situation where people had a discussion saying "Ah what is this household? What is this thing called a household?" has it ever been a source of debate or discussion or has it always been "this is straightforward"? We use the standard definition

R: There have always been problems wherever there have been polygamous homes. There would be discussions or there would always be issues. Because it is not very comfortable the way you try to define them. The definition does not fit what you find on the ground, and so, erm, what we would commonly do is, agree as a team. Somebody describe what they have found and then you agree what you would consider a household. You have a definition. You have a situation that deviates from the definition, what do you basically agree? So most of the time when you get the situation where there is different houses but the same family you would consider them separate households."

Academic producer/user, Statistics, Uganda

Another issue is the fuzziness of sleeping and cooking arrangements: a polygamous husband sometimes shares houses with more than a wife, and there can be a continuum of case in terms of eating arrangements for the members of the family, children included. The data producers themselves actually agree that the definition is fuzzy, in the sense that it can be operated differently in different types of data collection. This practice is common, depending on the objectives of the study (a census requires enumerating everyone just once and not more, whereas household budget surveys tend to try to include all women in a polygamous union with a husband): these differences have implications for the way household characteristics are measured, and on the comparability of the two datasets.

"R: when you come to like a household head...

I: aha

R: ... we kind of like have different definitions of that person. So, for example, if you come to the census, a household head definitely is someone who provides the meals, who carries out the major decisions in the household. That is who we consider the household head. But then when you come to this survey in particular, uh, it is kind of different. Like if in, for example let me take a polygamous family.

I: yeah sure sure

R: ... there is one husband with several wives. So he is a household head everywhere. In the census, he is the household head.

I: yeah

R: but when it comes to other surveys, where he spends the night is where he is the head and in other areas, he is not the head.

I: yeah

R: ... so when you come to now running the relationship status it is kind of arose.

I: yeah

R: ... so, if you ran for this household and the same household in another survey you would find different outcomes.”

Data producer, Uganda

### *Tanzania*

I: and how do you deal with polygamous ?

R: those cases don't give us problems unless unless this man who has several wives they are not staying in the same compound, one is staying there, one is staying there, because each wife will make a unit household ... there were. I'm trying to recall. Which one was..yes, oh yes, we are talking about that particular night “where did you sleep” but you didn't go there that day you went there 2 days after you ask somebody where did you sleep the other night...laughs....and the problem was also even worse to polygamous men. He doesn't want to tell you he slept with that wife [laughs] so it was really very challenging for him to tell you where he slept. Some men will even tell you I slept in all the houses and the houses are 5km apart [laughs] it was really very challenging to reinforce to extract correct information

Academic, Tanzania

The issue of double counting emerged of paramount importance to our KIs (Randall, Coast et al. 2011):

Bon là c'est, les cas de double compte et c'est des questions qui nous reviennent pendant les formations... Et l'exemple qu'on prend le plus souvent c'est le cas du polygame ou le monsieur qui a ce qu'il appelle 2<sup>ème</sup> bureau on passe ici pour enquêter, on tombe sur son ménage, et une semaine ou 2 semaines ou dans une autre grappe là, on retombe encore sur la même personne dans un autre ménage pour le moment j'ai pas encore rencontré le cas, mais je dis que c'est pas des choses qui sont possibles, ça peut arriver

(Burkina Faso, démographe, grande expérience des EDS).

“another problem in the African context is polygamy. How do you define a polygamous family who are not staying together at the time they are in different villages however for the man himself he is in several households so are you duplicating, are you double counting or something, so those are some of the issues.”

Senior ex-UN demographer

The specificities of the DHS in separating a polygamous husband from his wives is at odds with laws relating to marriage in Burkina Faso, where the man forms a household with each of his wives:

Pour nous, le ménage c'est quoi ? Notre définition dans tous nos manuels, ça peut être une personne, ou un ensemble de personnes. Ce que nous privilégions, c'est que c'est des gens qui vivent et qui mangent généralement ensemble et qui reconnaissent l'autorité d'une seule personne. Pourquoi ? Pour la simple raison que la notion de ménage si je prends le code des personnes et de la famille du Burkina ici où la polygamie est tolérée, dans un foyer polygame, on dit que le... eh l'homme et chacune de ses femmes forme un ménage. Ça veut dire quoi ? Que si j'ai un polygame qui a 5 femmes, je suis, eh j'ai en face de moi 5 ménages par rapport au code des personnes et de la famille du Burkina.

(Homme, démographe, grande expérience des EDS).

## Analytic implications

In terms of analysis the way polygamous families are captured in different households can lead to a wrong impression in analysis. The increased frequency of female headed households induced by the application of the census definition is noted even by the data producers.

- I: Sticking with a polygamous example, which way as an analyst do you think is better? To have the man attached to each of his wives or to have the man attached to just one wife, randomly?
- R: I think ....
- I: ... and the other wives, do they become female headed households?
- R: They become, aha, female headed households. I think personally, I would rather have the man attached to the different households because that is when you have...when you run your statistics, you are like, how many households are female headed or male headed? When you use the other approach of having women female headed you discover many households are female headed...
- I: yeah
- R: ...which is not representative of what is exactly on the ground.
- I: yeah
- R: ... So, I would rather have the other approach"

Data producer, Uganda

Our interviews highlight that those people who exploit and use survey and census data tend not to consider whether a polygamously married man is (not) included in the households of his wives. The following quote, from a team that commissions data and consumes it, but is not involved in producing it, shows that they would assume polygamous men are taken into account as a head of household in each of the households formed by a wife. These sentiments are common, particularly from analysts who are involved in the secondary analyses of data:

- I: when you go there and you are asking who is the household head if you are using the de facto approach, it will look like in these 2 houses, there are female headed households and then this man is enumerated in the place where he spent the night. Now when you are running the analysis to find out the issue of household headship, you will come up with inflated figures for female headed households. Yet the real sense, these 2 wives who are apart, the head the real head is actually this man who has 3 wives. So, that is why actually the coming census, they are saying they want to use both approaches to try to get the actual estimates of the proportion of female headed households in Uganda
- R: I thought every woman would report that man as a head of household so he would actually appear 3 times
- I: yes that is also another challenge
- R: but do you know there is a follow up question. Are you single or married? Because if this woman says she is married to a man, will she still be the head of a household?
- I: no but the challenge again is if you take they are married to a man you may think they are 3...
- R: unless you say he is married to other wives also. Does he have other wives also?."

Data commissioner, Uganda

This theme is returned to, in our next section, which considers data from recent DHS analyses and census in the study countries. Key informants, in all four countries, tend to cite polygamous unions as problematic

for survey data collection. The problematizing of polygamy for data collection was particularly strong in Tanzania. The avoidance of double counting – to the extent that this separated polygamous unions – was paramount from the perspective of many survey professionals that we interviewed. We argue that this desire to avoid double counting – for surveys at least – obscures the realities of peoples’ living arrangements in the pursuit of statistical rigour. Finally, those key informants that were involved in the use and analysis (but not necessarily the collection) of data tended to be unaware of how data about polygamy (and the realities of polygamous unions, including access to resources) are collected and managed. We found little evidence that the concerns of survey designers about polygamous unions were reflected by data analysts.

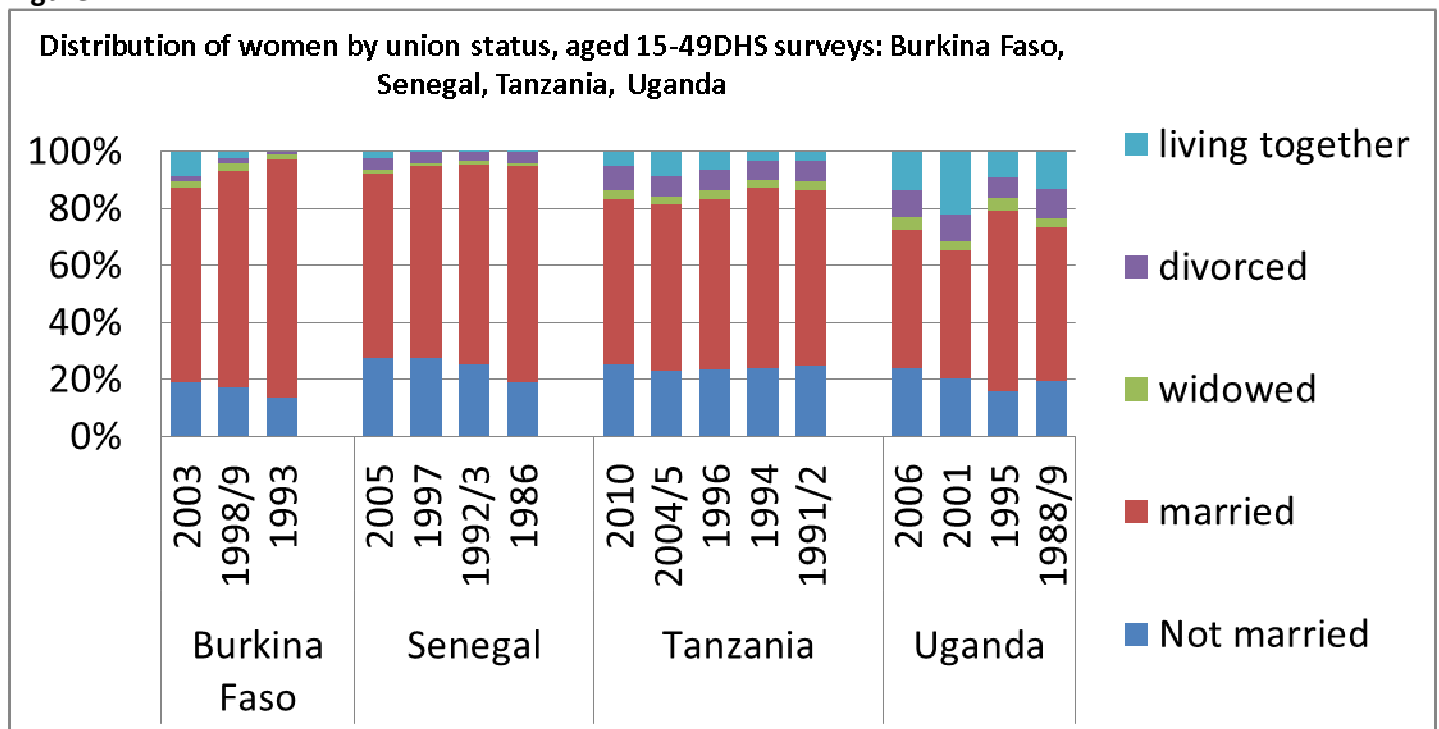
### Results 3: Analyses of surveys (Burkina Faso, Tanzania, Senegal, Uganda) and censuses (Mali)

#### DHS data: Burkina Faso, Tanzania, Senegal, Uganda

Three major descriptive themes emerge from a broad description of trends in unions for women since the late 1980s to the present day (Figure 1)

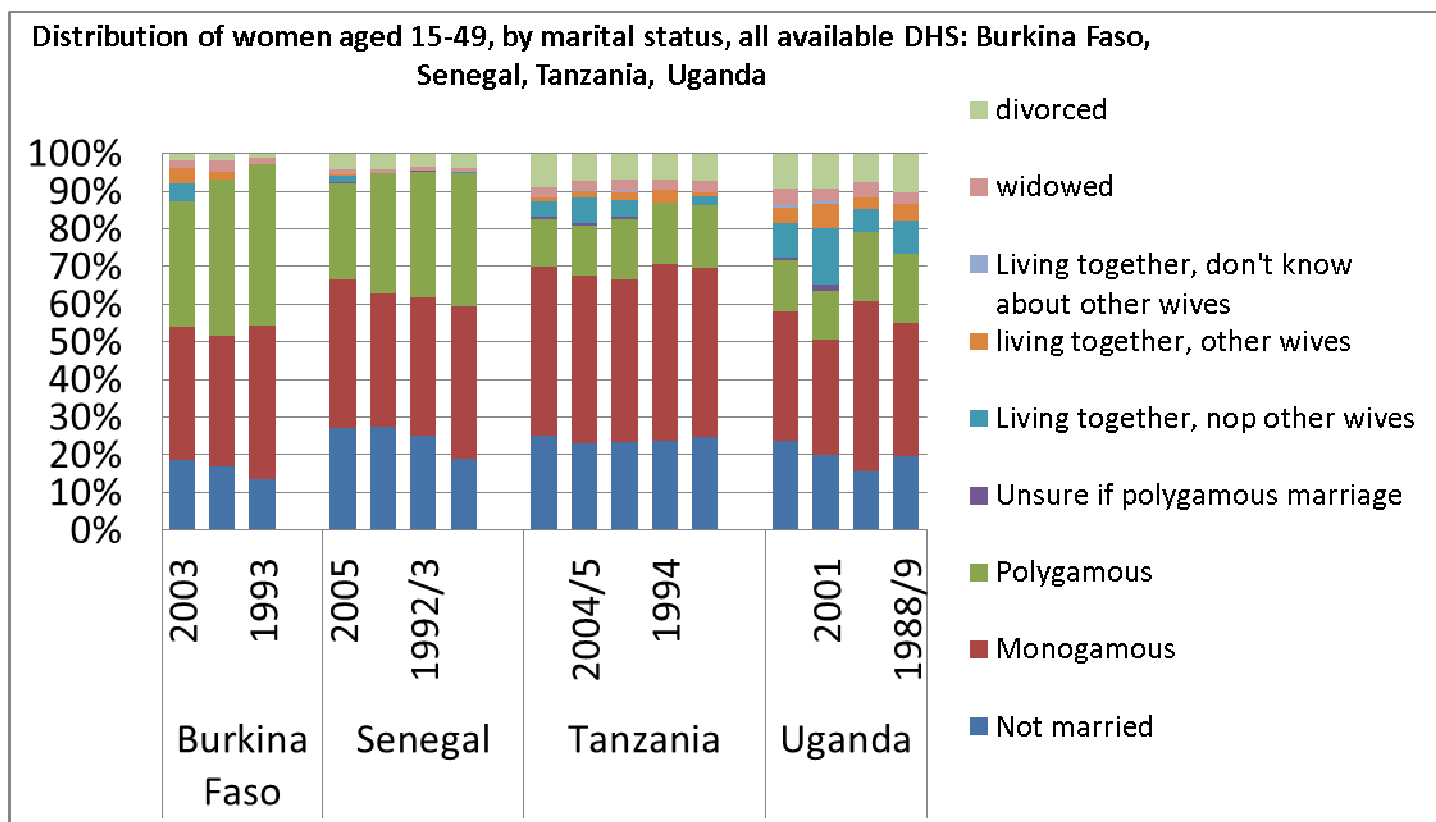
- Increasing proportion of women reporting themselves in “living together” relationships
- Increasing proportions of never married women
- Declining proportions of women in married unions (monogamous, potentially polygamous or polygamous)

Figure 1



The level of detail available for analyses depends on the questions included in the surveys, has increased over time (Appendix B), reflected in more detailed trends analyses (Figure 2).

Figure 2:



From Table 2 it seems clear that in our 4 study countries, polygamy is most widespread in Burkina, followed by Senegal. In both these countries divorce is relatively rare for women. The proportions of women living together as if married (cohabiting) are increasing in all four countries, although from rather different baselines. For example, in the 1980s just 0.3% of women in Senegal (1986) reported themselves as being in a cohabiting relationship, compared with 13.4% of women in Uganda (1988/9). There is evidence of a clear evolution in the emergence of cohabiting unions in sub-Saharan Africa. We do not analyse these data for rural-urban differentials, but would anticipate levels of cohabitation to be relatively higher in urban compared to rural areas, based on extensive work by others e.g.: Antoine.

**Table 2: Proportion of women in cohabiting (living together as if married, but not married) unions, by number of other wives/partners**

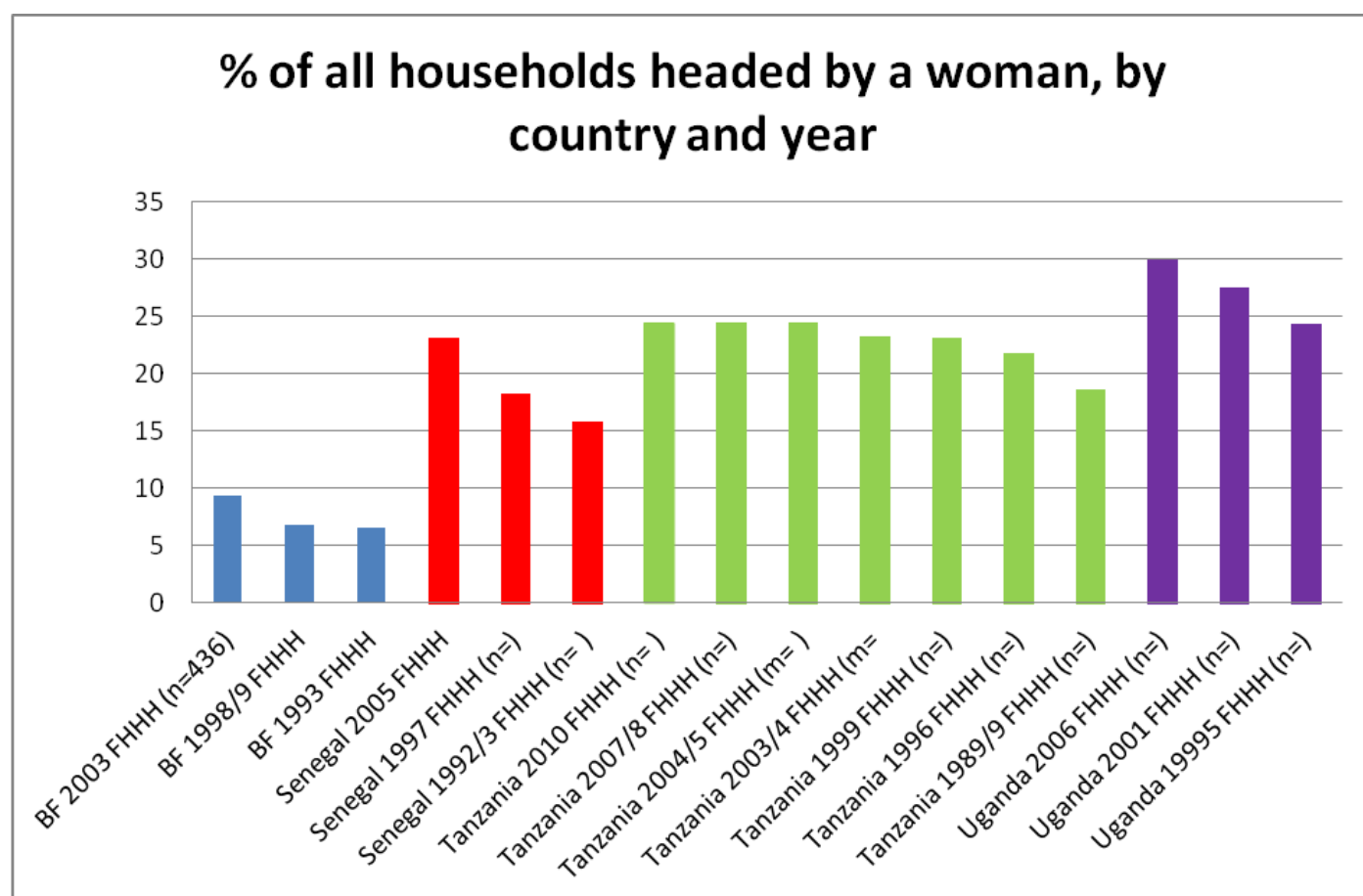
		Total	Monogamous	Polygamous	DK if any other partners
Burkina Faso	2003	8.8	4.7	4.1	n/a
	1998/9	2.2	0.0	2.2	n/a
	1993	n/a	n/a	n/a	n/a
Senegal	2005	2.2	1.8	0.4	0.0
	1997	0.2	0.1	0.1	n/a
	1992/3	0.1	0.1	0.0	n/a
	1986	0.3	0.2	0.1	n/a
Tanzania	2010	4.9	4.0	0.8	0.1
	2004/5	8.9	6.8	2.0	0.1
	1996	6.7	4.6	1.9	0.2

	1994	3.2	n/a	3.2	n/a
	1991/2	3.5	2.4	1.1	n/a
Uganda	2006	13.9	9.2	4.1	0.6
	2001	22.3	15.1	6.4	0.8
	1995	9.1	6.0	3.1	0.0
	1988/9	13.4	8.8	4.6	0.0

It is interesting to note the emergence of a set of questions about whether the cohabiting relationship is “monogamous” or “polygamous”, or “do not know”. Although the relative proportions are small, it does shed light on the considerable ambiguity over peoples’ unions, and their knowledge about the extent of their partners’ other unions. This level of ambiguity, we argue, is likely to increase as levels of rural-urban migration mean increasing geographic dislocation of partners, and the ability to maintain concurrent partnerships without another partner being aware.

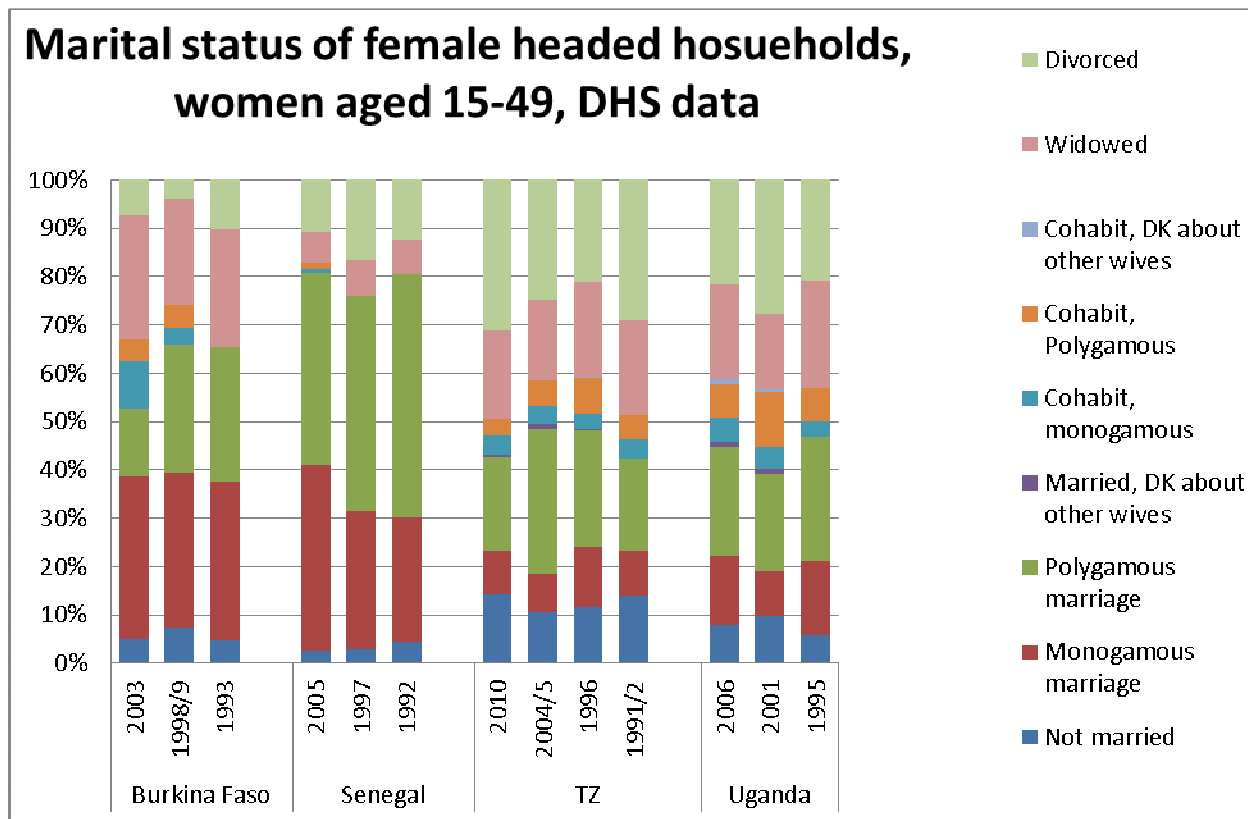
Let us now consider trends in the level of female headed households, also using DHS survey data (Figure 3). In all four countries, the proportion of households, defined by the DHS as being headed by women, has increased over the last two decades:

**Figure 3**



Not only has it increased over time but there is also a substantial difference between East and west (or possibly Francophone and Anglophone Africa) – although Senegal is catching up. The practice of polygamous wives living apart from each other is widespread in some ethnic groups in Senegal (e.g.: the Pulaar) but is also widespread in Dakar (Antoine and Djire 1998).

Figure 4:



Relatively large proportions of women, reported as currently being in a union, are defined as being heads of their households. The patterns differ between countries and regions, and can be attributed to: the emergence of new forms of polygamous marriage; transformations in society and more female headed households; or, high levels of migration. These data shows that substantial proportions of female-headed households are headed by women currently in a union where there are known (or suspected) other wives or partners, from nearly 1 in 5 female-headed households to more than 1 in 4 female-headed households in Senegal

**Table 3: Proportion of female-headed households headed by a woman currently in a (suspected) polygamous union**

BF	18.6%
S	41.2%
TZ	23.5%
Ug	31.4%

If cross-sectional surveys are detaching women (and their co-resident dependents) from the broader resources associated with that polygamous union, then we do have to ask, to what extent are such cross-section survey data actually capturing the realities of peoples' lives? Or, are the levels of female-headed households grossly over-estimated, on the basis of the household definition. In reality, are the numbers of female headed households rather lower? Our analyses cannot answer this question, but they do raise serious questions about the validity of data on female-headed households from surveys such as the DHS.

Comparative surveys such as the DHS also have to take account of that that polygamy takes very different forms, and that these forms are evolving as society changes. There are polygamous households where it is



quite clear that the man contributes considerably ( e.g.: in terms of labour, grain, resources) to each of his wives even if they cook separately. But there are also many ethnic groups that are traditionally polygamous where wives provide largely for themselves and their children, and the husband may have two /three wives in different places. The analytic problem is that the household definitions tends to treat both cases as the same. The absence of (some) polygamy data for some Tanzanian census/survey series has been described as “a political decision”:

“because a lot of it is about social engineering, or however you want to label it, controlling information...so like about polygamy, everyone knows it’s (Tanzania) a very polygamous society, but it’s not something they will talk about very openly, religion or HIV, or sexual behaviour, they will talk about more comfortably now, then they would about polygamy. And yes, I think it’s one of those areas that people, especially senior figures don’t want to touch”

(Advisor, Tanzania)

### Census data: Mali 1998

In order to strengthen the robustness of our analyses, we extend our review to include analysis of Malian census data, which are collected on a de jure basis. Do we see similar issues raised with census data? The larger numbers involved (9764166 individuals) in census analysis make more detailed analyses possible, for example, considering rural-urban and ethnic differences. Such nuanced analyses are not advisable with the relatively small number involved in DHS samples. Data collected in the Malian 1998 census include the total number of current wives for each man. In theory the relationship of every person in the household with the household head is recorded. By comparing the number of wives in a household with the number of wives declared by a man, we can analyse how many men live with all their wives compared with those that live with just 1 or some of their wives.

Two points about data quality

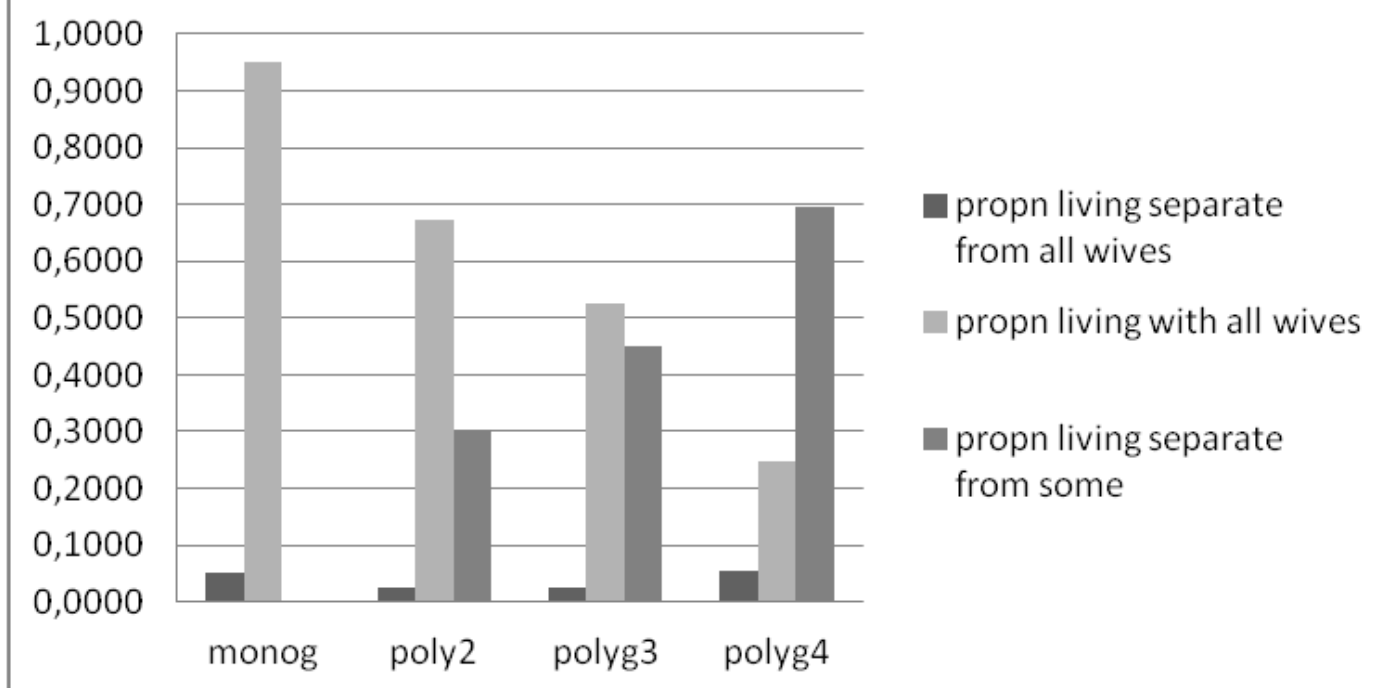
1. Some of the identity codes were wrongly entered, producing duplicated records, which have been removed from our analyses (n=33030 - 0.3%)
2. Some men are recorded as living with more wives than the total number of wives declared

	n	percentage	
Total men who are household heads	1418291		
Missing marital status or too young to be married	9851	0.69%	
Inconsistent data (marital status does not tally with number of wives in household)	45832	3.2%	Ranges from 19% of the household heads declared as single but with at least 1 ‘wife’ in the household to 1-3% polygamous men with more than the requisite number of wives and 5% divorcees with a wife in the household

All these inconsistent and missing cases were removed from our analyses.

### Figure 5

### Mali 1998 census: proportion of married men living with none/all/some wives by number of wives



About 5% of monogamously married men live apart from their wives (Figure 5). As census data are collected on a de jure basis, these cases should not be affected by seasonal migration – but it is likely that many of these were cases of husband’s longer term migration. A similar proportion of highly polygamous men live apart from all their wives. The patterns of polygamous co-residence indicate that a considerable proportion of polygamously married men do not live with all their wives; for those with 4 wives, only about 25% live in the same household as all four wives. What factors influence whether a man is likely to live with his wives? Firstly, different ethnic groups in Mali have different levels of polygamy and different patterns of polygamous residence.

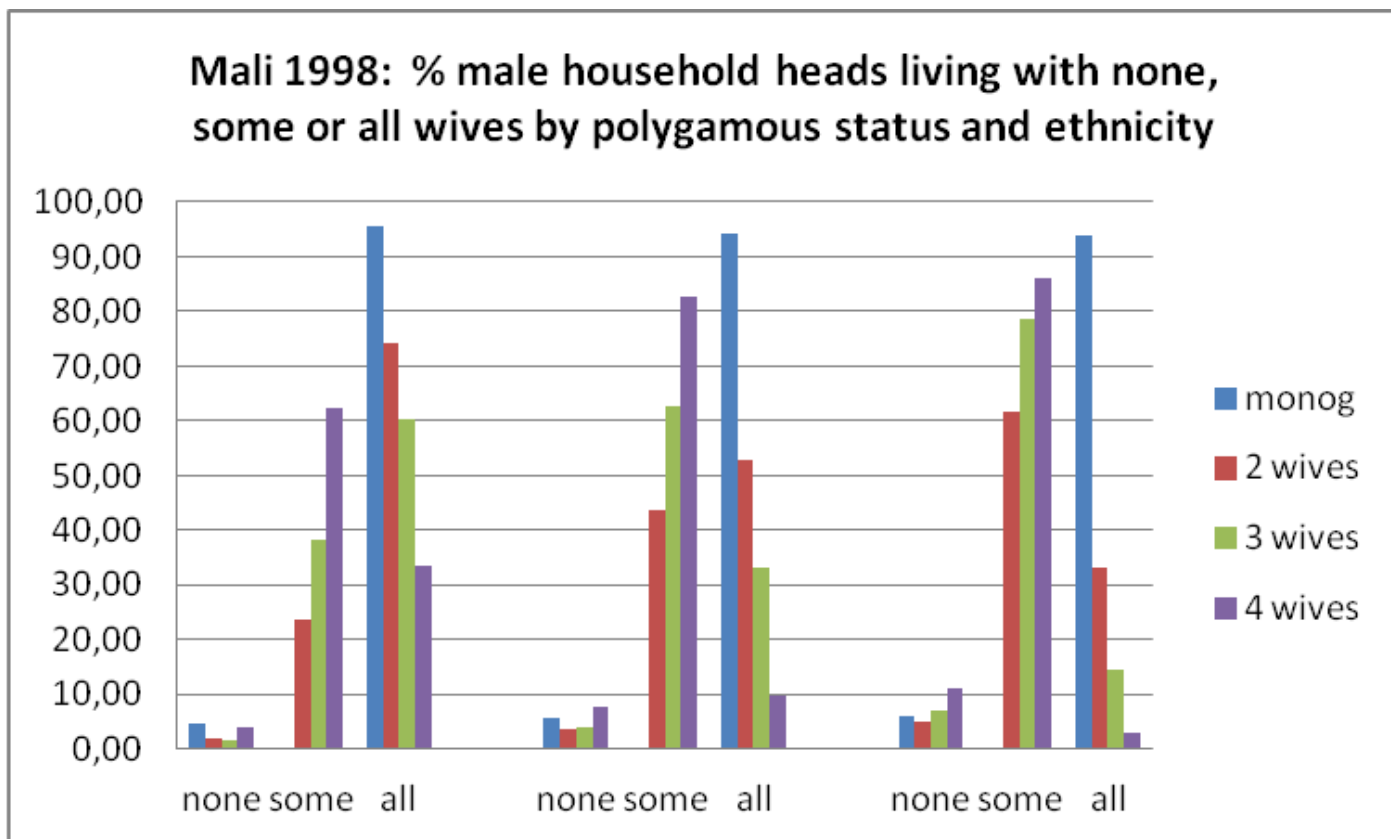
**Table 4: 1998 ethnic group (maternal language) by proportion of men married polygamously, proportion of men over 50 married polygamously**

Maternal language of the male household head	Proportion of currently married household heads who are monogamous	Proportion currently married household heads over 50 who are monogamous	Intensity <sup>9</sup> of polygamy	Proportion of polygamous men living with ALL their wives Higher or Lower than national average
Bambara	69.3	52.6	Medium	H
Peul	77.7	67.3	Low	L
Songhay	76.1	67.4	Low	L
Marka /Soninke	57.8	38.3	high	H
Kassonke	69.5	53.2	Medium	H
Senoufo	63.9	46.7	High	V. H
Dogon	69.6	64.8	Medium	L
Maure	89	84	Very low	V. L
Tamasheq	84.3	78.6	Very low	V. L
Bobo	75.2	67.9	Low	L
Minianka	69.4	59.4	Medium	H
Haoussa	68.9	53.5	Medium	L
Samogo	63	46.4	Medium	V.H
Bozo	68.2	54.7	Medium	L
Arab	89.4	85.8	Very low	Too few

Intensity of polygamy was defined by the proportion of currently married men in monogamous or polygamous unions: Very low <15% men; Low 15-24.9%; Medium 25-34.9; High 35%+ men

In Malian populations with high intensity of polygamy, men are much more likely to live with all their wives. In those populations where polygamy is less common, those men who are polygamously married are less likely to co-habit with all their wives.

Figure 6



We can therefore identify very different polygamy residence regimes (Figure 6). Amongst the southern and Mande groups a majority of men with two or three wives and over 30% of those with 4 wives lives with all their wives. In the Northern agricultural, agropastoral and fishing groups only half of men with two wives live with both and only 10% of men with 4 wives live with them all. Amongst the three pastoralist populations where polygamy is rather uncommon, though still practised, very few polygamously married women cohabit in their husband’s household. Looking at the same issue by place of residence (urban, rural, Bamako (the capital)) there is much less variation. Levels of coresidence are similar in Bamako to other urban areas and slightly lower than in rural areas.

### Conclusions

Our research shows that systems for data collection (e.g.: survey, census) in Africa do address polygamy, but in very varied ways, and with varying levels of detail. West African Francophone countries appear – partly as a function of a more de jure tradition of census data collection – to collect more detailed information on polygamous unions. However, whether these sources of data are able to collect valid information about new and changing forms of polygamy, is open to debate. We know that internal migration, for economic reasons, is increasing the geographic distance between spouses. It is likely that increasing levels of informal polygamy (married or cohabiting) are likely to accompany this broader demographic change.

Even within areas with high levels of traditional practice of polygamy, the forms of that polygamy vary substantially. In Kenya and Tanzania, for example, with the exception of selected ethnic groups such as the Maasai, close geographic proximity of wives is unlikely. Among the Maasai it is expected that polygamously married women will all live in the same compound as their husband, although each wife has her own hut, and cooks for herself and her children every night. Such close residence of polygamous wives is much less acceptable amongst other ethnic groups in Tanzania and Kenya. Similar differences have been noted between Wolof and Pulaar in Senegal: in rural areas Wolof live in large extended family compounds where polygamously married women each have their own hut or room and the husband rotates, as do the cooking responsibilities. Here women have been known to wish for their husband to take another wife in order to relieve the first wife of some of her daily housework duties.

*(woman) Having a co-wife allows you to rest. If you do the cooking today, tomorrow it's her turn. If you go seeking money today, tomorrow she will seek..... if you travel you leave her in charge of your family, and on your return you find your family. (wolof village women, Senegal 1999)*

Our analyses of the Malian census data suggest that even within a country where polygamy is widespread there are very different ways in which polygamy is managed on a day to day basis in terms of co-residence of polygamous husbands with all of their wives and therefore co-residence of wives. In Mali this seems to differ considerably by maternal language and therefore by ethnicity.

We suggest that the urban-rural differentials in polygamy are likely to extend far beyond a simple equating of lower prevalence of polygamy with urban areas, as established by earlier demographic work on polygamy. Rather, we suggest that changing societies may well mean increasing diversification of types of polygamy in urban areas. For example, in Dakar, Senegal there is extensive polygamy (Antoine), although polygamy tends to be acceptable amongst women of higher socio-economic status only if the wives each have their own accommodation (paid for by the husband). Each wife leads an independent life and it is highly unlikely that the women even see or (sometimes) know each other. There are probably similar urban patterns in other countries. It seems plausible that women who have not been exposed to considerable amounts of co-habiting polygamy when growing up may be less tolerant of at is an acceptable marital arrangement.

Set against this context of changing types and meanings of polygamy across sub-Saharan Africa, our research suggests that – above and beyond typically poorly represented populations – homeless, highly mobile, institutional populations – significant number of people involved in polygamous unions (whether formal or informal, de facto or de jure) of people are likely to be inadequately captured by household surveys. The division of polygamous households into one male headed household and disconnected female headed households is perhaps the clearest (but by no means the only) example of this. Interviewers apply a survey household definition even if respondents consider they are being asked to represent themselves in ways that are at best inadequate, and at worst inaccurate. Polygamy can sometimes be inferred from data when the presence of multiple spouses in a household are recorded. But, this inference only works when spouses co-reside and are enumerated together.

The questions asked about union status in general and polygamy in particular (whether married or cohabiting) are becoming increasingly nuanced. For example, the introduction of a response category for women to be able to report that they do not know whether their husband/partner has any other wife/wives. What, however, are the implications (e.g.: embarrassment, shame) of a woman replying that she is unsure whether her husband has (any) other wives or partners? Is it likely that these data are an under-reporting of lack of knowledge on the part of women about their husband's / partner's potential other partners? That some women might have suspicions that there are other partners (especially if their husband, for example, works away from home), but are unlikely to want to admit it. Indeed, when women respond to this category of "Don't know", is it clear who she might be referring to? When responding to this question, and a woman is thinking of other women (other than those "married" to her husband), is she thinking about "living with" or "having a relationship with"? Would this include deuxième bureau, girl

friends or even regular sex workers? There is very little methodological survey work being carried out in sub-Saharan Africa, and we argue that data collection in settings where polygamy is happening needs some focused methodological research (e.g.:cognitive testing of questions about polygamy) if our data are to accurately reflect how people live their lives.

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### **Bibliography**

- Antoine, P. (2002). Les complexités de la nuptialité : de la précocité des unions féminines à la polygamie masculine en Afrique. Démographie : analyse et synthèse. II Les déterminants de la fécondité. G. Caselli, J. Vallin and G. Wunsch. Paris, INED: 75-102.
- Antoine, P. and M. Djire (1998). Un célibat de crise. Trois générations de citoyens au Sahel: trente ans d'histoire sociale à Dakar et à Bamako. . D. Ouedraogo, P. Antoine and V. Piche. Paris, L'Harmattan.
- Antoine, P. and J. Nanitelamio (1995). "Peut-on échapper à la polygamie à Dakar ? ." Dossiers du CEPED **32**: pp.31.
- Bledsoe, C. (1993). Marriage: New Forms, New Ambiguities. Social dynamics of adolescent fertility in Sub-Saharan Africa. C. Bledsoe and B. Cohen. Washington DC, National Academy Press: 37-68.
- Bledsoe, C. and G. Pison (1994). Introduction. Nuptiality in sub-Saharan Africa. C. Bledsoe and G. Pison. Oxford, Clarendon Press: 1-24.
- Brainard, J. N. (1991). Health and development in a rural Kenyan community. New York, Peter Lang.
- Caldwell, J. C. and P. Caldwell (2002). "Africa: The New Family Planning Frontier." Studies in Family Planning **33**(1): 76-86.
- Clignet, R. (1970). many wives, many powers, Evanston.
- Delaine, G., C. Hill, et al. (1992). The Social Dimensions of Adjustment Integrated Survey. Washington, D.C., World Bank.
- Department of Economic and Social Affairs Statistics, D. (1997). Principles and Recommendations for Population and Housing Censuses Revision 1. New York, United Nations.
- Department of Economic and Social Affairs Statistics, D. (2006). Report of the 2006 Expert Group Meeting on the 2010 World Programme on Population and Housing Censuses. New York, United Nations.
- Dodoo, F. N.-A. (1998). "Marriage Type and Reproductive Decisions: A Comparative Study in Sub-Saharan Africa." Journal of Marriage and Family **60**(1): 232-242.
- Ezeh, A. C. (1997). "Polygyny and Reproductive Behavior in Sub-Saharan Africa: A contextual Analysis." Demography **34**(3): 355-368.
- Falen, D. J. (2008). "Polygyny and Christian marriage in Africa: the case of Benin." African studies review **51**(2): 51-74.
- Fulton, D. J. R. and S. C. Randall (1988). Households, women's roles and prestige as factors determining nuptiality and fertility differentials in Mali. . Micro Approaches to Demographic Research J. C. Caldwell, A. G. Hill and V. Hull. London, Kegan Paul International: 191-211.

- Garenne, M. (2001). Gender asymmetry in household relationships in a bilinear society: the Sereer of Senegal. Paper prepared for the virtual conference on African households: an exploration of census data University of Pennsylvania, Center for Population Studies November 21-23, 2001.
- Goode, W. J. (1970). World Revolution and Family Patterns. London, Free Press.
- Grosh, M. and P. Glewwe (2000). Designing Household Survey Questionnaires for Developing Countries: Lessons from 15 years of the Living Standards Measurement Study - Volume I. Washington, D.C., World Bank.
- Hassouneh-Phillips, D. (2001). Polygamy and wife abuse: A qualitative study of Muslim women in America. **22**: 735-748.
- Hern, W. M. (1992). "Polygyny and fertility among the Shipibo of the Peruvian Amazon." Population Studies **46**.
- Hertrich, V. (2006). Polygamy: stability or change? The case of a rural population in Mali. **35**: 39.
- Josephson, S. C. (2002). "Does polygyny reduce fertility?" American Journal of Human Biology **14**: 222-232.
- Karanja, W. W. (1994). The Phenomenon of "Outside Wives": Some Reflections on its Possible Influence on Fertility. Nuptiality in Sub-Saharan Africa. C. Bledsoe and G. Pison. Oxford, Clarendon Press: 194-214.
- Kenya, R. o. (1989). Kenya Population Census 1989: Volume 1. Nairobi, Central Bureau of Statistics.
- Kenya, R. o. (1999). Population and Housing Census 24/25th August, 1999: Enumerator's Instruction Manual.
- Kiros, G.-E. and D. Kertzer (2000). "The impact of postmarital residence on fertility, early childhood mortality and child health in Southern Ethiopia " Journal of Comparative Family Studies **31**(4): 503-518.
- Klissou (1995). La polygamie au Bénin: une approche régionale des tendances et des déterminants.
- Lang, G. and J. Smart (2002). "Migration and the 'Second Wife' in South China: Toward Cross-Border Polygyny." International Migration Review **36**: 546-569.
- Lardoux, S. and E. van de Walle (2003). "Polygyny and Fertility in Rural Senegal " Population **58**(6): 717-744.
- Leone, T., E. Coast, et al. (2009). Did you sleep here last night? The impact of the household definition in sample surveys: a Tanzanian case study. British Society for Population Studies Annual Conference. Brighton: 9-11th September, 2009.
- Lesthaeghe, R. and e. al (1989). The nuptiality regimes in sub-Saharan Africa. Reproduction and social organisation in sub-Saharan Africa. R. Lesthaeghe, University of California Press: 238-337.
- Malawi, G. (2004). Second Integrated Household Survey, 2004: Enumerator Manual for Household Characteristics, Income and Expenditure Questionnaire. Zomba, National Statistical Office.
- Mann, K. (1994). The Historical Roots and Cultural Logic of Outside Marriage in Colonial Lagos. Nuptiality in Sub-Saharan Africa. C. Bledsoe and G. Pison. Oxford, Clarendon Press: 167-193.
- Marcoux, R. (1997). "Nuptialité et maintien de la polygamie en milieu urbain au Mali." Cahiers Québécois de démographie **26**(2): 191-214.
- Mbatha, T. (2011). In and out of polygyny: a case of black South African women's experiences of marriage. **25**: 29.
- Meekers, D. (1992). "The Process of Marriage in African Societies: A Multiple Indicator Approach." Population and Development Review **18**(1): 61-78.
- Pebley, A. and W. Mbugua (1989). Polygyny and Fertility in Sub-Saharan Africa. . Reproduction and Social Organization in Sub-Saharan Africa. R. Lesthaeghe. Berkeley, University of California Press: 338-364.
- Peterson, S. (1999). "Marriage Structure and Contraception in Niger." Journal of Biosocial Science **31**(1): 93-104.
- Pison, G. (1986). "La démographie de la polygamie." Population **41**: 93-122.
- Randall, S. C., E. Coast, et al. (2011). "Cultural constructions of the concept of household in sample surveys." Population Studies **65**(2): 217-229.
- Romaniuc, A. (1988). La polygamie et la parente en Afrique tropicale: le point de vue d'un demographie. African Population Conference. Dakar, IUSSP.
- Timaeus, I. M. and A. Reynar (1998). "Polygynists and their wives in sub-Saharan Africa: an analysis of five Demographic and Health Surveys." Population Studies **52**(2): 145-162.

- United Republic of, T. (1969). 1967 Population Census Volume I: Statistics for Enumeration Areas. Dar es Salaam, Central Statistical Bureau.
- United Republic of, T. (1982). 1978 Population Census Volume IV: A Summary of Selected Statistics. Dar es Salaam, Bureau of Statistics.
- United Republic of, T. (1991). 1988 Population Census: Regional Profile, Arusha. Dar es Salaam, Bureau of Statistics.
- United Republic of, T. (1993). Household Budget Survey 1991/92. Volume II: Methodology, Tanzania Mainland. Dar es Salaam, Bureau of Statistics.
- United Republic of, T. (2003). 2002 Population and Housing Census: Volume I - Methodology Report. Dar es Salaam, Central Census Office, National Bureau of Statistics.









