Extended Abstract

Household headship, vulnerability, and migration in deltas in Africa and Asia

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Summary

There has been a rising interest in studies on household headship because of the increasing proportion of female-headship. Studies in developing countries suggest that a substantial proportion of households in rural areas are headed by females and such households tend to have fewer resources (land, labour, and finances) to invest in their livelihoods. Migration has been identified as one of the contributing factors to the increasing number of female-headed households. However, none of these studies have examined how exposure to different hazard levels affect migration under different household headships. Deltas are vulnerable to climate change and other environmental hazards and the proportion of female-headship in deltas is higher than national averages. Using data from structured DECCMA household surveys, we hypothesise that female-headed households when exposed to different environmental hazard levels are more likely to have migrant members compared to other household headships. Our findings illustrate the role of household headship in the context of migration in hazard prone areas.

1. INTRODUCTION

Deltas all over the world are going through some demographic, economic and environmental changes, which will have some implications for household composition and migration issues. There has been increasing female headship in households since the 1970s which has generated research interest in recent times because of the high perceived vulnerability status of female-headed households (Flato, Muttarak and Pelser, 2017). Aside the theoretical and policy reasons for the high interest in studies on household headship, the proportion of female headed households provides useful information for development agenda, especially within the urban context (Bigombe and Khadiagala, 2003). The proportion of female headed households rose from 22% in the 1990s to 28% in recent times (ICF International, 2015). In addition, analysis of the population and housing census data of Ghana (2010), India and Bangladesh (2011) indicates an increasing proportion of female-headed households in the Volta delta, the Mahanadi delta, the Indian Bengal delta (IBD) and the Great Brahmaputra Magana (GBM) delta in Bangladesh compared to national averages.

Apart from the few papers that cite male out-migration as the cause of the increasing female headship (Flato, Muttarak and Pelser, 2017; Chant, 1998), there is little information about other drivers of the increasing female headed households. Similarly, the relationship between hazard levels and migration under different household headships is not known. Women become household heads based on various reasons and it is important to distinguish between the different circumstances under which women become heads for policy guidance. There are however, different definitions of a household head. Several studies have suggested that the definition of household headship in national surveys, which focusses on individual members subjective definition of a head is narrow and is therefore not appropriate measure

of household outcomes (Flato, Muttarak and Pelser, 2017; Rogan, 2013; Budlender, 2005). There have been suggestions of alternative measures of household headship that provides a better measure of household outcomes (Flato, Muttarak and Pelser, 2017; Rogan, 2013; Fuwa, 2000). These alternative measures are based on demographic or socio-economic classification of a headship.

Demographically, a household head can be defined as a female or male head with or without other adult females or males in the household whilst socioeconomic definition of household headship relates to the economic roles that individual members play in the household (Flato, Muttarak and Pelser, 2017). Already, some studies have found significant differences in economic wellbeing among female household heads compared to their counterparts in other households (Fafchamps and Quisumbing, 2007; Fuwa, 2000). What is missing however, is the effect of hazard levels on households under different headship and how that ultimately affect migration in households. It is not clear if households located in high-risk hazard places will experience migration of members than those in lower risk areas. Finally, theoretically, the socio-demographic characteristics of individuals and households, such as sex ratio of household, mean age of household members, level of formal education of household head, employment status, and dependency ratio among others, tend to affect migration in households (Greenwood 1985, DaVanzo 1978, Tervo 1997). It is critical to test this under different household headship experiencing different levels of environmental hazard.

2. WHY FOCUS ON DELTAS IN AFRICA AND ASIA

Deltaic regions are rich in natural resources and are one of the most densely populated areas in the world (Volke et al., 2015). The agricultural and commercial activities in delta areas have served as attraction to populations from different regions. The impact of environmental hazards in deltas in recent times have created problems for delta populations. The effect of sea level rise and storm surges and associated erosion and salinization has affected the livelihoods of the population in deltas. These changes are taking place in deltas due to natural processes and human influences. There has been a lot of human activities in deltas across the world in the form of hydro power generation dam constructions, oil extraction fields, mining, and urbanisation. These activities have destroyed the natural topography of delta regions and created problems for populations in these areas.

Also, recent climatic hazards have had a significant impact on coastal regions including deltas. Sea level rise as well as frequent cyclones have destroyed livelihoods in these areas and created unemployment among the population. As a result, there has been an increase in intra delta migration and from delta regions into other places in search of alternative sources of livelihood. Because of the high population density in delta regions especially in places that are close to primary cities (Seto, 2011), increase in migration to these places will create further congestions and increase health risk in these areas.

Finally, it is projected that coastal regions will continue to be vulnerable to climatic hazards in the future and it is critical to have policies and programmes to address the needs of coastal population. Addressing global climate change problems is a top priority of the Sustainable Development Goals (SDGs), especially since its adverse impacts can undermine sustainable

development. At the same time, reducing gender inequalities and empowering women and girls is fundamental in making progress across all the SDGs. These two issues are also closely linked: in certain circumstances, women are more vulnerable to the effects of climate change than men, for example, due to weaker physical ability, lower socioeconomic status, and greater social, economic, and political barriers in coping capacity. The climatic problems in coastal areas including deltas, which exacerbate the existing gender inequalities is a critical issue that requires urgent attention.

3. HOUSEHOLD HEADSHIP, VULNERABILITY AND MIGRATION

The vulnerability of people and place to climate change is not limited to only climatic factors, but also some socioeconomic factors and institutional arrangements (Flato, Muttarak and Pelser, 2017). The Fifth Assessment Report of the IPCC definition of vulnerability has elements of exposure, sensitivity and adaptive capacity (IPCC 2014), which reflects how complex it is to measure the concept. Several studies have therefore examined social vulnerability (Ghant, 1997; David and Enerson, 2012; Rogan, 2013), with few studies on economic vulnerability in recent times (Ligon, 2003; Chudger, 2011; Kumar and Quisumbing, 2013; Flato, Muttarak and Pelser, 2017). Measuring vulnerability at the household level also come with its problems because of the several ways in which household headships are classified (Rogan, 2013).

Several studies on household vulnerability have classified female headed households as vulnerable compared to other households (Klasen and Lechtenfeld, 2015; Djurfeldt, Djurfeldt, and Lodin, 2013; World Bank, 2011). However, Flato, Muttarak and Pelser, 2017 in a review of 61 studies conducted in Africa, Asia, and Latin America between 1978 – 1993 revealed that female headed households were overrepresented among the poor base on a variety of poverty indicators. Recent studies have also casted doubts on how female headed households are generalised as being at a disadvantage (Anyanwu, 2013; Djurfeldt, Djurfeldt, and Lodin, 2013, Klasen et al., 2014). Thus, the classification of household vulnerability could be done in a way that places one group at a higher risk.

Even though vulnerability is place based, people are affected differently based on their age, sex, level of education, occupation, and other social and economic variables (Muttarak, Lutz and Jiang, 2015). These differentials in vulnerability are critical in helping communities to build resilience to climate-related hazards. The use of self-reported household heads characteristics to examine the vulnerability of households to a hazard is misleading because this may not reflect the objective capacity of the household to respond to a disaster. In several surveys in SSA and Asia, the head of a household has always been that oldest male or female in the household who may have little or no contribution to the wellbeing of the household. Thus, household headship according to the tradition of the people is by the age of the individual. It is therefore, important to find alternative definitions of household headship as used in previous studies (Flato, Muttarak and Pelser, 2017; Rogan, 2013; Fuwa, 2000) to understand how it influences migration in households under different environmental hazard risk levels.

4. DATA AND VARIABLES

Data on migration and household demographics are key to the analysis of the influence of household headship on migration in vulnerable environments. We classified delta regions as vulnerable environments to climatic hazards such as floods, droughts, erosion, cyclones, sea level rise, salinization, and storm surges. To be able to cluster our study area for the purposes of our analysis, we classified the study areas based on hazard levels. Thus, even though hazards may be place specific, not everyone in the area will be exposed to the same level of risk depending on other demographic and socio-economic factors. As part of the DECCMA household survey methodology, we computed the hazard levels for each enumeration area in the study area, which gave a fair representation of the level exposure to hazards by populations in the study area as part of the DECCMA household survey methodology. Therefore, this research employed quantitative analysis of household-level data on migration to examine the effects of household headship on migration in the study areas. The DECCMA survey was conducted in four deltas in South Asia (Bangladesh and India) and in West Africa (Ghana) between March-October 2016.

In total 5450 questionnaires were completed out of which 31% (N = 1668) stem from households that reported at least one migrant. The four study sites, the Volta delta, the Indian Bengal Delta (IBD), the Mahanadi delta, and the Bangladesh portion of the Ganges-Brahmaputra-Delta (GBM) were selected for the following reasons (see Figure 1). First, each study site involves a region that has been regularly affected by climatic or environmental-related events and are also vulnerable to future climatic change (Kreft and Eckstein 2014; Harvey and Nicholls 2008; World Bank 2013). Secondly, since our hypothesis is to test how household headship influences migration in vulnerable environments, we chose low-lying coastal environment in different countries experiencing multiple environmental stressors (Syvitski 2008; Nicholls et al 2008). This provides an opportunity to examine how the different environmental stressors affect migration at the household level. Finally, to be able to test the true effect of household headship on migration, we selected areas that literature has shown to have high net-migration and high proportion of female headship (Szabo et al. 2016; van der Geest 2011, Census of India, 2011; Bangladesh Poverty Map, 2010; Ghana Statistical Service, 2012).

In all, fifty enumeration areas in each of the four deltas were selected for the implementation of the household survey. A two-stage cluster sampling was applied. The first stage of stratification created multi-hazard maps which divided the study areas into five hazard zones (very low, low, medium, high, very high) based on normalising the hazard score and dividing it into quintiles. Each enumeration area in the study area was assigned one of five hazard categories based on risk category with the greatest percentage coverage in the enumeration area. In each cluster, enumeration areas were selected based on the proportion of enumeration areas in the cluster. A household listing followed the selection of the enumeration areas based on the demographics and migration characteristics of households. After the household listing, thirty households were randomly selected within each enumeration area for the study. We believe this approach makes our data robust to be able to test our hypothesis on household headship and migration in deltas.

The dependent variable in the study is migration and is defined here by combining three types of population movement to constitute the dependent variable. These are: a) Permanent migration involving the movement of household members from the sending area to a new place of residence with the intention of remaining there for at least six months, b) Seasonal migration involving the movement of household members from the sending area based on seasonal conditions (Laczko and Appave 2015), c) Circular migration involving the movement of household members that is temporary and frequently repeated (Laczko and Appave 2015). Based on this definition we can identify households that are migrant households and those that are not. In this paper, we examined the total number of migrants per household in the last 5 years preceding the survey to understand how household headship is driven by recent migrations in the deltas.

Table 1 presents the main independent variable and other demographic and socio-economic variables that were controlled in the study. Our main independent variable is household headship, which we categorised based on other alternative definitions suggested by Flato, Muttarak and Pelser, 2017; Rogan, 2013; and Fuwa, 2000. We categorised household headship into five: =1 Single households, =2 Male household head with children and or aged members only, =3 Female household head with children and or aged members only, =4 Male household head with other economically active members, =5 Female household head with other economically active members. We did this categorization to ensure that the contributions of adult household members are recognised.

5. FINDINGS

6. DISCUSSIONS

7. CONCLUSIONS

Figure 1. Location of study area in low-lying delta regions in Asia and Africa.

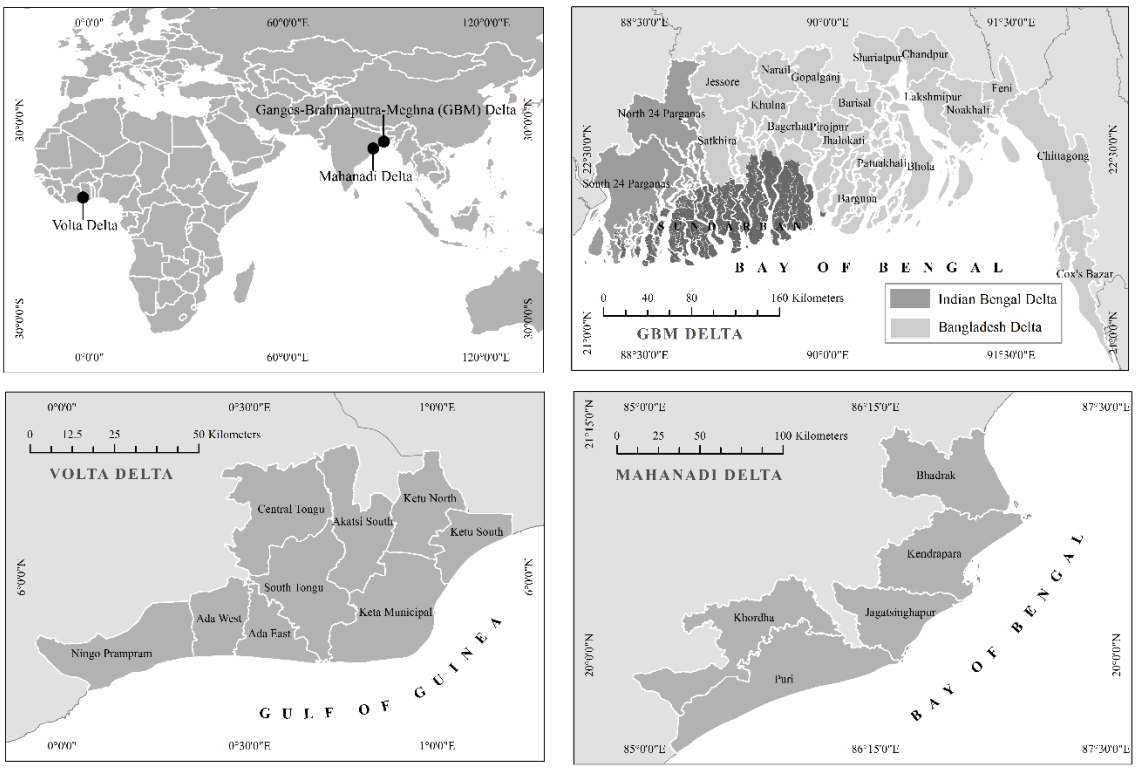
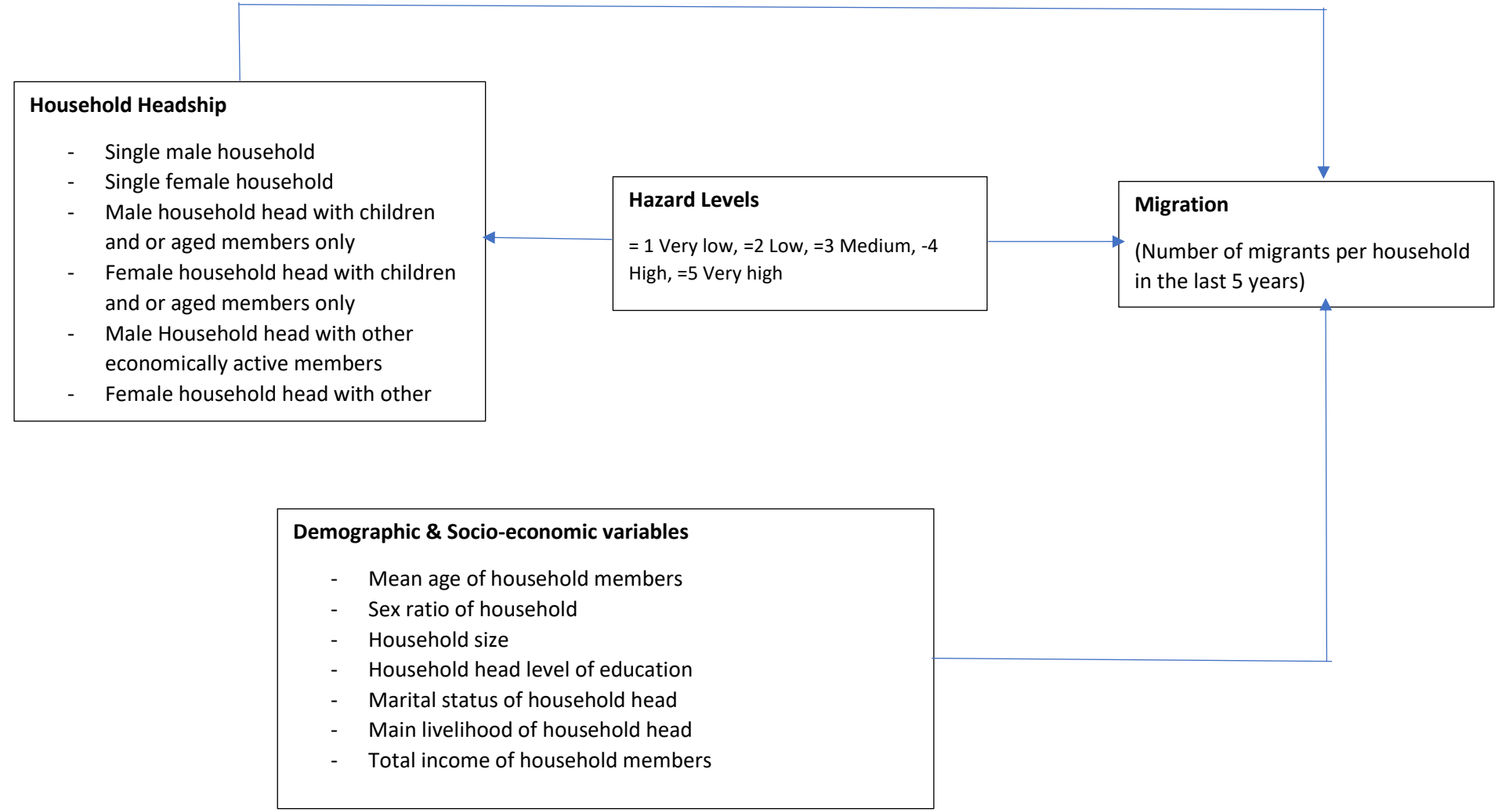


Table 1. Description of Independent Variables in this Study

Variables	Definitions
Household Headship	
Single households	=1 Single households =2 Male household head with children and or aged members only =3 Female household head with children and or aged members only =4 Male Household head with other economically active members =5 Female household head with other economically active members
Male household head with children and or aged members only	
Female household head with children and or aged members only	
Male Household head with other economically active members	
Female household head with other economically members	
Environmental Risk Hazard Levels	
Very Low	= 1 Very low, =2 Low, =3 Medium, -4 High, =5 Very high
Low	
Medium	
High	
Very high	
Demographic and Socio-Economic Variables	
*Sex ratio of household **	NA
*Household size **	
*Mean age of Household Members **	
*Household Dependency Ratio**	
Household head level of education	
No Education	= 1 no education, = 2 primary education, = 3 secondary education, = 4 higher education
Primary Education	
Secondary Education	
Higher Education	
Main Livelihood of Head of Household	= 1 if other than ecosystem based, = 0 otherwise
*Total Income of Household Members**	NA
Marital Status of Household Head	
Never married	=1 Never married, =2 Currently married, =3 Co-habiting/living together, =4 Widowed, =5 Divorced, =6 Abandoned/separated
Currently married	
Co-habiting/living together	
Widowed	
Divorced	
Abandoned/Separated	
Family Members or Friends Migrated (Network)	=1 if yes, = 0 otherwise
* Continuous variables	

Draft Analysis framework



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