

## Retraction Notice

Title of retracted article: **Resilience Enhancing Characteristics of Land Eviction-Displaced Communities in Uganda's Oil Exploration Areas**

Author(s): Joseph Ssekandi\*, Mburu John, Wasonga Oliver, Laban Macopiyo, Charles Francis

\* Corresponding author. Email: sekjoseph@gmail.com

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### History

Expression of Concern:

yes, date: yyyy-mm-dd

no

Correction:

yes, date: yyyy-mm-dd

no

### Comments:

Large-scale corrections should be made to the paper.

This article has been retracted to straighten the academic record. In making this decision the Editorial Board follows [COPE's Retraction Guidelines](#). Aim is to promote the circulation of scientific research by offering an ideal research publication platform with due consideration of internationally accepted standards on publication ethics. The Editorial Board would like to extend its sincere apologies for any inconvenience this retraction may have caused.

Editor guiding this retraction: Prof. Dr. A. C. Matin (EiC of OJAppS)

# Resilience Enhancing Characteristics of Land Eviction-Displaced Communities in Uganda's Oil Exploration Areas

Joseph Ssekandi<sup>1\*</sup>, Mburu John<sup>1</sup>, Wasonga Oliver<sup>1</sup>, Laban Macopiyo<sup>1</sup>, Charles Francis<sup>2,3</sup>

<sup>1</sup>Department of Land Resource Management and Agricultural Technology, University of Nairobi, Nairobi, Kenya

<sup>2</sup>Department of Plant Sciences (IPV), Norwegian University of Life Sciences, Ås, Norway

<sup>3</sup>Department of Agronomy & Horticulture, 279 Plant Science, University of Nebraska, Lincoln, NE, USA

Email: \*sekjoseph@gmail.com

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## Abstract

Uganda's confirmation of viable commercial quantities of oil in the Albertine Graben has triggered a wave of land evictions of people from their traditional lands. However, there is a dearth of information on the impact of such evictions on the displaced households and people's livelihoods, and why some households recover and others fall into vulnerability. Data was collected through a cross-sectional survey among 362 randomly selected households. A revised FAO Resilience Index Measurement and Analysis was used to evaluate data. Results indicate that resilience-enhancing characteristics include: household food security and access score, frequency of external assistance amount of cash and in kind assistance, and herd and crop field size after eviction. Pastoralist and off-farm dependent households had higher resilience compared to smallholder farmers and agro-pastoralists. Pastoralists appear to be the more resilient group because of mobility; this allows them have access to pasture and water around the conservation area. Smallholder farmers and agro-pastoralists had the least adaptive capacity and easily became more vulnerable. We conclude that smallholder farmers and agro-pastoralists lack capacity to withstand post eviction shocks because of the inability to adjust and adapt to these changes in real time.

## Keywords

Resilience, Recovery, Vulnerability, Eviction

## 1. Introduction

Large-scale acquisitions of land for the purpose of private investment and de-

velopment have increased worldwide in the last two decades, with a significant proportion of this activity found in sub-Saharan Africa. The nature of land acquisitions in Africa has been divergent; some acquisitions are through bilateral arrangements; some are a result of individual purchases; while others are illegitimately processed without the knowledge of bonafide owners and occupants [1]. As a number of African countries have confirmed viable commercial quantities of oil, there has been shifted from exploration to commercial production in the last 10 years, with a consequence of intensifying land acquisitions in the oil-rich areas [2]. Over the last 10 years, between 51 and 63 million hectares are currently involved in land deals or are under negotiation in 27 African host countries [1]. Land acquisitions in most of these countries including Uganda are driven by speculation and targeted focus on net benefits that will accrue from government compensations [3].

In Uganda, loss of land in a space of less than five years has triggered a wave of human migration movements in the Albertine Graben area, with some evicted households concentrating in camps while others have moved to other locations [4]. Households lost land that was a sole source of production, and their major source of income from crops and animals as a result of the eviction process. Households must adapt and make dynamic changes to meet their short-term and long-term needs wherever they resettle. It is anticipated that households will experience behavioural responses to lack of land and result in higher human population density [5]. This dynamic change will require a significant increase in production per unit of land and shift labour into non-farm activities by way of diversification [6]. What is apparent is that there isn't enough land where everyone can settle, no extensional support to double production, nor is there an adequate source of relieved support to evictees [7]. It is therefore important to draw lessons from local strategies households employ to cope with the eviction shock, and what determines their buffer capacity and self re-organization to adapt to changes.

Resilience here indicates the ability to anticipate, absorb, accommodate or recover from disasters in a timely, efficient and sustainable manner. Strategies include protecting, restoring and improving food and agricultural systems under threats that impact food and nutrition security, agriculture, and food safety/public health [8]. However, there is ongoing debate surrounding the use of resilience, mainly used in describing food security, and some scientists claim that the term is inherently too conservative to be usefully applied to other situations in which more radical and broad social change is required.

This research seeks to answer the following questions:

- 1) Which livelihoods and resettlement typologies would enhance resilience and which would lead to greater vulnerability?
- 2) What influences the ability of households to adapt to change?
- 3) Why do some households recover better and more quickly than others?

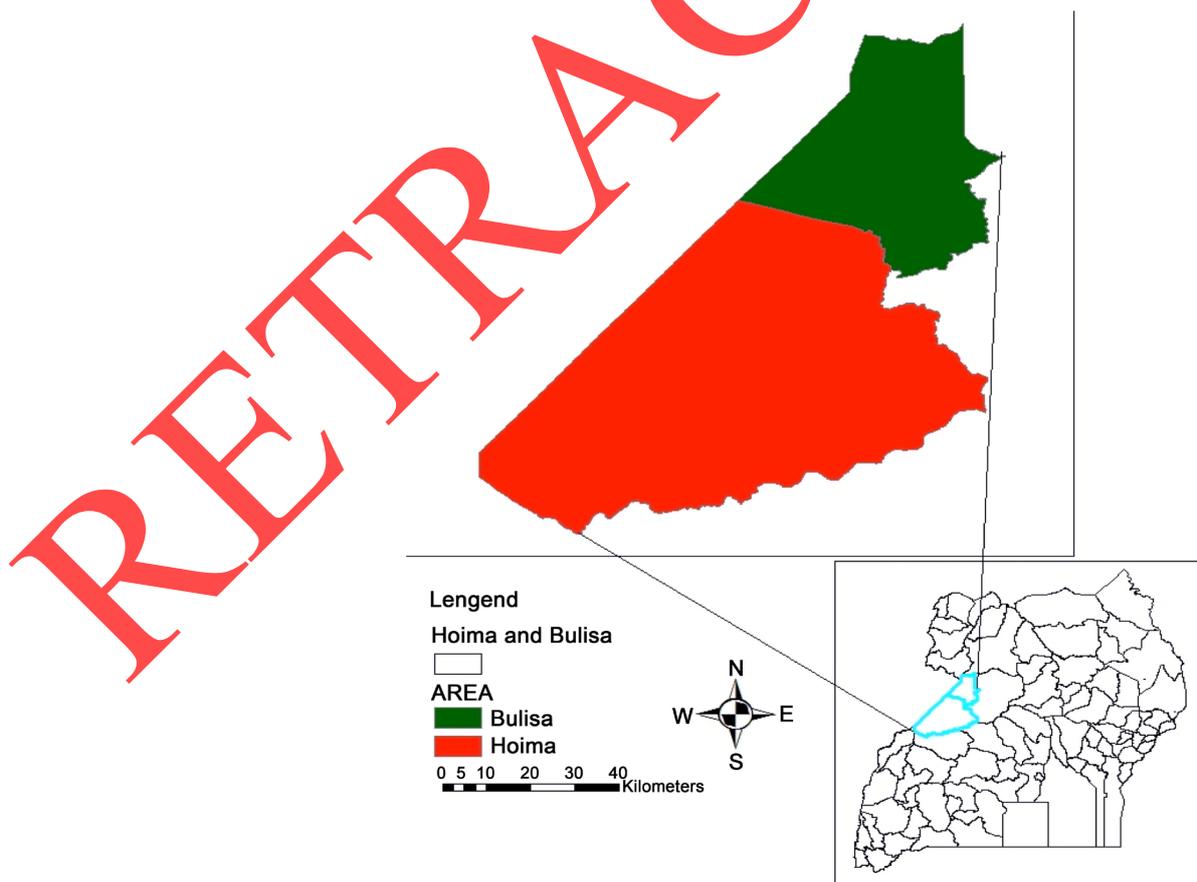
For many individuals and communities experiencing evictions, resilience means becoming more proficient at preventing immediate impacts, recovering

from the shock, rebuilding new lives, and overcoming multiple stresses. This study evaluated the factors that influence the ability of households to withstand eviction shock and then to recover under these unfortunate circumstances.

## 2. Methods

### 2.1. Study Area

The study area is located in the northern part of the Western Region of Uganda (see **Figure 1**); it is an ecological hotspot as well as a developing source of oil. Hoima District consists of 2 counties with 11 sub-counties and 2 town councils, geographical coordinates  $01^{\circ}25'N$   $31^{\circ}05'E$ , land area  $3664.1 \text{ km}^2$  ( $1414.7 \text{ sq mi}$ ), with a population of 548,800 and density of  $149.8/\text{km}^2$  ( $388/\text{mi}^2$ ). Buliisa district consists of two sub counties and one town council, coordinates  $02^{\circ}11'N$   $31^{\circ}24'E$ , land area  $2498.3 \text{ km}^2$  ( $964.6 \text{ sq mi}$ ), human population 80,800, and density of  $32.3/\text{km}^2$  ( $84/\text{mi}^2$ ). People were either pastoralists, agro-pastoralists or subsistence agriculturalists before the evictions. Land disputes in this region have become more common since the discovery of more 3.5 billion barrels of oil. Within the last 10 years, over 25,000 people have been evicted from their lands, causing displacement, loss of livelihood, land dispossession, loss of landscape/sense of place, and loss of traditional knowledge/practices/cultures. Many



**Figure 1.** Map of Uganda showing location of the study area.

of the evictees are still living in pseudo camps within the districts; it remains uncertain whether they will be allowed to stay and for how long. Loss of land means loss of their own capacity to provide families with food. Well-intentioned promises of compensation and resettlement have not been fulfilled, and it appears that so far no efforts were or are being made to build capacity to enhance food production and recovery.

## 2.2. Data Collection

A socio economic survey was administered to 372 evictees out of a total population of 7191 evicted households. All respondents were purposively selected for the study; all of these were from randomly selected villages without any attempt to bias the selection. The main tools for quantitative data collection were household questionnaires, Focus Group Discussion (FGD), and Key Informants including local government officials who played a major role in the resettlement project and were contacted by phone and email and invited to participate in the research. A focus group discussion was conducted on 24 April 2014 with four local councils and three leaders in Buliisa including the Chairman, Chief Administrative Officer, Community Development Officer, and Secretary for Production. Following the FGD, further field observations were undertaken in the resettlement areas where the researcher spent time with people understanding day-to-day livelihood struggles. Socioeconomic data were used to estimate resilience using a two stage factor analysis. In the first stage an index for each component is calculated using an iterated principal factor method over a set of observed variables. In the second stage, the resilience index is derived using the sum of the factor analysis to get a value for each variable. Resilience index is a weighted sum of the factors generated using Bartlett's (1937) scoring method.

The empirical strategy followed a three-step procedure: 1) identification and measurement of the variables selected for each resilience indicator; 2) estimation of the latent variable representing each indicator, and of the resilience index using factor analysis and principal components analysis; and 3) application of Classification and Regression Trees (CART) to estimate precise splitting rules based on a regression tree, to improve understanding of the whole process.

## 2.3. Empirical Model

The revised FAO Resilience Index Measurement and Analysis (RIMA) model was used to explain why one household returns to a desired level while a similar household does not. The model explains the interaction between shocks and their effects on households. The model assumes that the probability of suffering from a shock due to a particular set of household characteristics is determined by each household's livelihood. Resilience to land eviction is assumed to depend on the options available to households within the community to make a living. This approach was initially applied to assess resilience to food security in which resilience was measured as a latent variable defined by income and food access

(IFA), assets (A), access to public services (APS), social safety-nets (SSN), stability (S), and adaptive capacity (AC); this is illustrated in Equation (1) below:

$$R_i = f(IFA_i, S_i, APS_i, SSN_i, A_i, AC_i) \quad (1)$$

Since this study was about resilience to land eviction, more variables were added to the RIMA model that we considered relevant, and this helped to ensure a more inclusive and robust analysis. The additional factors included are land tenure regimes (TR), Physical Assets (PA), and Resettlement Option (RO). The adjusted model becomes:

$$R_i = f(SSN_i, APS_i, PA_i, IFA_i, TR_i, S_i, AC_i, RO_i) \quad (2)$$

The rationale behind this model is that each household is characterized by a number of characteristics that contribute to its recovery from the shock. How well an individual household recovers or not is a function of the outcomes from decisions taken and options available. Factor Scores were then combined into an index which gives an overall quantitative resilience score; these were presented by livelihood option.

#### **Estimation procedure**

The empirical strategy follows a three-step procedure: 1) identification and measurement of the variables selected for each resilience indicator; 2) estimation of the latent variable representing each indicator, and of the resilience index using factor analysis and principal components analysis; and 3) application of CART methodology to estimate precise splitting rules based on a regression tree, to improve understanding of the whole process. Below is how variables were determined.

##### **a) Income and food access (IFA)**

This component was computed from three indicators:

- 1) Per person daily income (PPDI) was computed from the estimation of daily income of the household after eviction;
- 2) Per person daily expenditure (PPDE) was computed from the estimation of daily household expenditure after eviction;
- 3) Household food security and access score (HFIAS) was computed from a number of days a household had not less than 2 meals per day.

##### **b) Social safety nets (SSN)**

Social safety nets are crucial for all evictees especially during the transition from the onset of eviction to final resettlement destination in absence of any formal support system. This component was computed from three indicators at the time of or immediately following eviction:

- 1) Amount of cash and in kind assistance (AC&IKA) in monetary terms from relatives or close friends for the period after eviction;
- 2) Frequency of assistance (FA) was used to estimate the number of times a household received assistance in any form, whether weekly, monthly or annually;
- 3) Proximity to extended family (PEF) was to help understand whether a

household settled around an extended family and whether the extended family offered any support after eviction.

**c) Access to public services (APS)**

This was measured by how far must people in a household walk to a health facility, school, church, public road and water source.

**d) Adaptive capacity (AC)**

This was used to estimate the importance of several demographic factors:

1) Income diversity (ID) was the number representing income generating sources (e.g. a mixture of crop and livestock production);

2) Average education (AE) was the mean of the years of education completed by the household's members;

3) Employment ratio (ER) was calculated as the ratio between the number of people in the household making a contribution (grazing, farming, fetching wood and water among other contributions) and the household size.

**e) Physical assets (PA)**

This meant that a strong assets base is important for collateral security for rural people to restore and strengthen their livelihoods and their abilities to withstand and quickly recover from shocks, and was computed from:

1) Housing (H) was defined as a roofed shelter with capacity for people stay there;

2) Durable index (DI) was obtained by summing up all the various physical assets (plough, bicycle, radio, TV, pack animals);

3) Tropical livestock units (TLU) includes those owned by the household, using the conversion factors of 0.7, 0.1, 0.1 and 1.0 for cattle, goat, sheep and pigs respectively (Tache and Sjaastad, 2010) to put these into one common unit;

4) Land size under utilization (LSU) was obtained by summing up the total land area available for the household for crop, housing and grazing, and computed as less than 1 acre, between 1 and 2 acres, 2 to 5 acres, and above 5 acres with the scores of 1 to 4 assigned, respectively.

**f) Stability (S)**

Index presents an estimation of the value of losses due to land eviction, the lower the loss the higher resilience for the household, as computed from the following factors:

1) Animal and crop shock (ACS) was the value-loss due to stolen or dead livestock during or after eviction;

2) Shocks others (SO) was used to summarize the value loss due to shocks other than those considered in the previous two variables, for example droughts, wild animals, diseases, illness, death, job changes;

3) Safety net dependency ratio (SDR) was computed as the amount of money received under the safety net programme divided by total household income.

**g) Resettlement option (RO)**

This provided a variable to indicate the type of eviction and especially resettlement:

- 1) Reintegration represented evictees who settled within nearby communities or found a host household proximity to where they had been evicted;
- 2) Settling in a conservation area represented a group that settled into land gazette for a national park;
- 3) Settling in urban area represented the number of people that settled around a landing site and changed livelihood activities.

Further illustration is presented in **Table 1** below.

### 3. Results

#### Factor loading

Estimates of the resilience index and its components are among the most important results that derive from the factor loading values in **Table 2**. We show that in the income and food access category, all variables had a high index score among pastoralists and off-farm livelihood groups, and the index was lower among small holder farmers and agro pastoralists. Income and food security index score was much lower in comparison to daily income and daily expenditure.

For social safety nets, small holder farmers had a negative index score for amount of cash and in-kind assistance ( $-0.715$ ), while pastoralists had the highest index ( $0.665$ ) for income and food access as well as well as frequency of assistance ( $0.829$ ). Both small holder farmers and off farm livelihood groups had a negative resilience index at  $-0.762$  and  $-0.167$ , and these results indicated that they had no extended family support network after eviction. Access to public services had a negative index score for off farm livelihood and an even score for all other categories. Small holder farmers negative score for income diversity ( $-0.395$ ), employment ratio ( $-0.550$ ) and average education ( $-0.389$ ) indicated a lower adaptive capacity and thus higher vulnerability of small holder farmers.

Stability, the ability to retain a reasonable number of animals and crop fields, has a higher index score among pastoralist ( $0.011$ ); the rest of the livelihood groups had negative scores. Of note was an even lower index among pastoralists which indicated a drop in yields and animal size. Reintegration scored a positive index for small holder farmers and agro pastoralists and negative index for off farm livelihoods and pastoralists. Small holder farmers and agro pastoralist were therefore more easily reintegrated. The resilience index for evictees that settled into an urban centre was negative for pastoralists and positive for the same group that settled into a conservation area. Tenure security, no rights scored highest for agro pastoralists and least for small holder farmers.

#### Resilience enhancing factors

Results from the Iterated Principal Factor Analysis indicate that income and food access was evenly distributed among all livelihood groups (see **Table 3**). Access to public services was high among small holders and negative for off farm households.

Resettlement Option indicated a negative correlation for all livelihood groups (small holder farmers  $-0.441$ , off farm livelihoods  $-0.033$ , pastoralists  $-0.036$ ,

**Table 1.** Resilience variables.

| Variable                        | Indicators   | How values were derived   | Range of Values  |
|---------------------------------|--|---|--|
| Income and Food Access (IFA)    | Per person daily income  | Household Questionnaire—daily household daily income divided by number of people in households                    | 0 = no income,<br>1 = less than 1USD,<br>2 = More than 1USD                                  |
|                                 | Per person daily expenditure                                     | Household Questionnaire—daily household daily expenditure divided by number of people in households               | 0 = no expenditure,<br>1 = less than 1 USD,<br>2 = more than 1USD                            |
|                                 | Household Food security and Access Score (HFIAS)                 | Number of days a household had not less than 2 meals  | 0 less than 2 meals,<br>1 more than 2 meals  |
| Social Safety Nets (SSN)        | Amount of cash and in kind assistance (AC&KA) in monetary        | Household Questionnaire—how much money received from family members away from home                                | 0 = no cash,<br>1 = less than 1USD,<br>2 = More than 1USD                                    |
|                                 | Frequency Assistance   | Number of times a households received assistance  | Ordinal scores 0 = no assistance,<br>1 = 7 days, 2 = 30 days,<br>3 = 365 days                |
| Access to Public Services (APS) | Proximity to Extended Family (PEF)                               | Household questionnaire—Did the household settle near an extended family  | Ordinal scores<br>0 = no, 1 = yes  |
|                                 | Distance to primary school, health centre, public road and water | Household survey—how far does a household walk to a health facility, school, church, public road and water source | 0 = no access,<br>1 = less than 1 kilometer<br>2 = 1 kilometre,<br>3 = more than 1 kilometre |
|                                 | Income Diversity   | Number of income Generating sources   | 0 = no source,<br>1 = one source,<br>2 more than one source                                  |
| Adaptive Capacity (AC)          | Average education  | Household survey—Number years spent in school for household house   | 0 - 10 years   |
|                                 | Employment ratio   | Household Questionnaire—number of people working in a household   | 0 = no, 1 = one person, 2 more than one person   |
| Physical Assets (PS)            | Housing  | Household resident in iron sheet roofed house   | Ordinal scores 0 = no, 1 = yes   |
|                                 | Duration Index   | Household Questionnaire; a list of all assets; plough, bicycle, radio, TV, pack animals                           | For each asset Ordinal scores<br>0 = no, 1 = yes   |
|                                 | Tropical livestock units   | Household survey—number of livestock (cattle, sheep, goat, chicken, pigs)   | conversion factors used  |
|                                 | Land size under utilization                                      | Household survey—land currently under utilization   | 0 = no land, 1 = less than 1 acre,<br>2 = 2 acres, 3 = more than 2 acres                     |
| Stability (S)                   | Animal and Crop Shock  | Household questionnaire—whether a household lost animals and crops  | 0 = no 1 = yes   |
|                                 | Safety net Dependency Ratio                                      | Household questionnaire—how much livelihood is derived from external support                                      | 0 = no dependency,<br>1 = less than 50%,<br>2 = more than 50%                                |
|                                 | Reintegration  | Multinomial logit analysis (Table 2) likelihood of resettlement   | 0 = no, 1 = yes  |
| Resettlement option (RO)        | Conservation   | Multinomial logit analysis (Table 2) likelihood of resettlement   | 0 = no, 1 = yes  |
|                                 | Urban  | Multinomial logit analysis (Table 2) likelihood of resettlement   | 0 = no, 1 = yes  |
| Tenure Regime(TR)               | Land ownership   | Household Survey- security of tenure on resettlement land customary (1), leasehold (2), freehold (3), others (4)  | For each tenure Ordinal scores<br>0 = no, 1 = yes  |

**Table 2.** Factors Loading for Resilience variables.

| Variables                        | Smallholder farmers | Off farm | Pastoral | Agro pastoral |
|----------------------------------|---------------------|----------|----------|---------------|
| <b>Income and Food Access</b>    |                     |          |          |               |
| Daily Income                     | 0.579               | 0.685    | 0.996    | 0.677         |
| Daily Expenditure                | 0.689               | 0.985    | 0.990    | 0.754         |
| HFIAS <sup>1</sup>               | 0.041               | 0.003    | 0.878    | 0.611         |
| <b>Social Safety Nets</b>        |                     |          |          |               |
| AC & KA                          | -0.715              | 0.061    | 0.665    | 0.040         |
| FA                               | 0.510               | 0.032    | 0.829    | 0.010         |
| PEF                              | -0.762              | -0.167   | 0.564    | 0.051         |
| <b>Access to Public Services</b> |                     |          |          |               |
| Primary school                   | 0.129               | -0.439   | 0.564    | 0.286         |
| Health center                    | 0.679               | 0.699    | 0.651    | 0.379         |
| Road                             | 0.760               | 0.0004   | -0.430   | 0.151         |
| Water                            | 0.503               | -0.439   | -0.127   | -0.133        |
| <b>Adaptive Capacity</b>         |                     |          |          |               |
| Income Diversity                 | -0.395              | 0.512    | 0.480    | 0.110         |
| Employment ratio                 | -0.550              | -0.478   | 0.628    | -0.084        |
| Average education                | -0.389              | 0.761    | -0.105   | -0.364        |
| <b>Physical Assets</b>           |                     |          |          |               |
| House                            | 0.913               | 0.635    | 0.480    | -0.127        |
| LTUs                             | -0.395              | -0.484   | 0.430    | 0.412         |
| DI                               | -0.484              | 0.806    | 0.802    | -0.484        |
| Land                             | 0.421               | -0.614   | 0.444    | 0.421         |
| <b>Stability</b>                 |                     |          |          |               |
| Shocks animal and crop           | -0.029              | -0.042   | 0.011    | -0.064        |
| Shocks others                    | -0.395              | 0.778    | -0.550   | 0.071         |
| SDR                              | -0.064              | -0.643   | -0.021   | -0.888        |
| <b>Resettlement Option</b>       |                     |          |          |               |
| Reintegrated                     | 0.413               | -0.189   | -0.024   | 0.323         |
| Urban                            | 0.049               | 0.053    | -0.063   | 0.097         |
| Conservation Area                | -0.096              | -0.934   | 0.068    | 0.055         |
| <b>Tenure Regime</b>             |                     |          |          |               |
| Ownership rights                 | 0.823               | -0.309   | 0.041    | 0.57          |
| No rights                        | -0.715              | -0.183   | 0.506    | -0.011        |

**Table 3.** Iterated Principal Factor analysis.

| Variable               | Smallholder farmers | Off farm | Pastoral | Agro pastoral |
|------------------------|---------------------|----------|----------|---------------|
| Income and Food Access | 0.933               | 0.888    | 0.953    | 0.681         |
| Access Public Services | 0.332               | -0.112   | 0.151    | 0.108         |
| Resettlement Option    | -0.441              | -0.033   | -0.036   | -0.057        |
| Physical Assets        | 0.261               | 0.414    | 0.420    | 0.044         |
| Adaptive Capacity      | -0.139              | 0.035    | 0.285    | -0.075        |
| Social Safety Nets     | -0.322              | -0.025   | 0.686    | 0.034         |
| Stability              | -0.163              | 0.059    | -0.327   | 0.232         |
| Tenure Regime          | -0.054              | -0.246   | -0.273   | -0.279        |

**Table 4.** Resilience index for livelihood categories.

| Livelihood Strategy Group | Resilience Index |
|---------------------------|------------------|
| Smallholder farmers       | -0.328           |
| Off-farm                  | 0.632            |
| Pastoralists              | 0.692            |
| Agro pastoralists         | -0.354           |

and agro pastoralists  $-0.057$ ), this meant that none of the resettlement areas offered a straightforward path to resilience. Physical Assets had a higher index score for pastoralists (0.420), and agro pastoralists had the lowest score at 0.044. The positive score across livelihood groups indicate that physical assets are an indicator of resilience for all evictees. Small holder farmers and agro pastoralists had negative scores for adaptive capacity of  $-0.139$  and  $-0.075$ , respectively; hence these groups were more vulnerable. Pastoralists retained kinship support in the new settlement areas and therefore had better social safety nets as is evidenced by communal land use for grazing and water. Agro pastoralists were the most stable group with an index score at 0.232, while small holder farmers and pastoralists had negative index scores at  $-0.163$  and  $-0.327$  which meant less resilient.

#### Resilient livelihoods

Overall results from resilience factors are presented in **Table 4**. Resilience analysis indicates that small holder farmers and agro pastoralists fell into vulnerability as indicated by the consistent negative correlation scores. In contrast, pastoralists and off farm livelihood households had the most resilient livelihoods with positive correlation scores.

This study showed that pastoralist and off-farm dependent households had the highest index score (0.692 and 0.632, respectively) compared to smallholder farmers and agro-pastoralists households ( $-0.328$  and  $-0.354$ , respectively). Key informant interviews revealed that derived income came primarily from livestock and livestock products. Off farm households were involved in sale of forest products surrounding forests and woodlands and fish smoking around Butyaba

landing site. Some causes of resilience are thus identified, but the actual situation may be far more complex.

#### 4. Discussion

The goals of this research were to understand the most useful methods for helping individuals, households and communities to cope with and then recover from the shocks of land evictions, and for them to become better off even after thousands were forced to flee their lands in the oil rich Albertine region. The study adds to an understanding of factors that lead to greater resilience of some evictees than others, and to answer three initial questions. Which livelihoods and resettlement typologies led to resilience and greater vulnerability, what were the influencing factors for recovery and failure, these are either household or mobility specific. Key results of the research show that a higher household food security and access score is an apparent resilience enhancing factor. This is based on three dimensions of food access: managing anxiety about being unable to access sufficient food, inability to secure sufficient amounts of food, and experience of not having sufficient food intake. Households' ability for absorbing the impact and then recovering from disruptive events in land eviction is related to pre eviction livelihoods and asset holdings. Much importance has been found in the family's livestock, which in households is central to the livelihoods of the poor and often forms an integral part of mixed farming systems; livestock provides sources of employment, income, quality food, fuel, draught power and fertilizer [9]. The second factor is relying on forest resources for livelihoods and to generate cash that is used to purchase food. Therefore households' ability to produce and/or purchase food whether from sale of livestock and/or forest resources creates assurance of the intake of sufficient, safe and quality food. It helps to maintain availability, access and utilization in times of emergencies, shocks and stresses [10]. However, resilience to eviction and disruptions to ecosystems and environmental disasters are inherently linked; the strong dependency and interconnectedness to natural resources has potential risks of deforestation, degradation of catchments/watersheds, degradation of land and desertification.

It is not surprising that we find a strong association between resilience and resettlement options, specifically with reintegration. The negative socioeconomic outcomes arose among the overwhelming majority of evictees that moved into an already densely populated area. This correlation tells us little about the causal impact of eviction on the hosts. We need more information on how new settlers interact with their hosts and local economies in various ways, and whether these have far-reaching consequences for their local hosts. One negative consequence—the one most often cited is the threat that evictees pose to the land resources where they settle specifically in buffer zones or open access areas such as forests where people fetch firewood, communal spring wells where everyone fetches water, and competition for communal grazing lands. Because land evic-

tions can be long lasting, most evictees are reintegrated in nearby communities for protracted periods, implying significant long-lasting impacts on host communities and their livelihood security. Furthermore, most evictees reintegrated may not necessarily enjoy better economic conditions and often may be struggling with pre-existing resource scarcity in their new environment; there is no guarantee that the reintegrated areas have fertile soils and water resources, among other natural resources. Therefore reintegration may place further burdens on the evictees and affect their current and future ability to withstand shocks and achieve resilience. In addition to the survey results and analyses, there were many observations and additional sources of information that help in the interpretation of what was found. In this study we stress that maintaining a flow of assistance in kind and cash is a major resilience. This was proven through the Classification and Regression Trees (CART) where assistance in form of remittances was found to provide cushioning against shocks and was of central importance during the resettlement period as it remained the most important and sometimes the only supply line to ensure the survival for some households. Small holder farmers for example had no time to harvest their crop fields and orchards, and therefore without external support they would be facing starvation; households with a flow of assistance from elsewhere avoided this. Households with family members working away in urban areas relied on kinship relations to meet short-term emergency relief to address medium-term needs “deficits”. Support flow assisted in the recovery process and alleviated immediate suffering by facilitating reconstruction efforts, reduced vulnerability and set in place safety nets and strategies to mitigate the effects of potential humanitarian crises. It is therefore important to have facilities so that Diaspora members can continue sending support and aid to their families and communities.

Assistance in form of remittances had a positive correlation with household diversification towards off farm employment. Off-farm activities provide some assurance of income and a route into diversified livelihoods that can create more productive and decent employment opportunities. It is no surprise that this group recovered more quickly compared to agro pastoralists and smallholders. However, numerous concerns have been raised related to timeliness and high cost of delivery to the recipients, as well as the costs to the giver in regards to mobile money transfers.

The relationship between access to public goods and services and resilience was found to be a negative one, although it was important to have availability within walk able distances. The accessibility of public services in previous resilience studies had been a reflection of the capacities to accurately recognize the diversity and nature of different needs, create recovery channels accordingly, and ensure equity and fairness in delivery and distribution [10] [11]. However, evicted households were more concerned with reconstructing their lives, where the available services seemed irrelevant at least for a short time. Social services such as welfare benefits, social housing, or funding for further and higher educa-

tion would attract evictees better since they address direct problems and speak to individual perception and self-confidence about their own ability to handle future events [12].

This study has been able to affirm the fact that pastoralists and off farm households were the more resilient groups. Pastoral households have strong resilience since livestock is an inherent insurance against disaster. The positive correlation between off farm households and resilience is of particular interest because of the markets and unskilled casual labour opportunities created by the oil sector [13]. The nonfarm sector also benefited from the increased demand from petroleum sector workers, although at the cost of exploitation due to literacy levels. Moreover, trade and employment opportunities have also emerged around Wanseko areas. The construction of a 92-kilometer tarmac road that links Hoima urban area to the oil-rich Kaiso-Tonya area is a driving force in improving market efficiency in the area. In Buliisa, pastoralists have also taken the opportunity to sell livestock products to the emerging population around oil exploration areas. Livestock and livestock products have been known as significant buffers for pastoral households in the event of adverse conditions. However, this study has been able to affirm the fact that pastoral households in fragile ecosystems have strong resilience as livestock is an inherent insurance against adversity [10]. The findings are in agreement with [14] that adaptive resource use and livestock mobility practices build pastoralist households' capacity to withstand shocks and stresses [15].

## 5. Conclusions

Empirical findings from this study are in agreement with a recent discourse that resilience is socially constructed, subjective and shaped in part by deeply-embedded cultural and societal norms and values [16]. Our research further affirms the already held view that factors such as social capital are an important element in the resilience of communities. This explains why pastoralists were the most resilient livelihood group. Evictees had valuable assets in livestock and had better social bonds to support one another; recovery was therefore a communal responsibility rather than a household sole responsibility as supported by [17]. Ability to diversify into other livelihood groups was also seen as a critical factor in recovery. The oil sector provided casual and semiskilled labour opportunities for people around, and this study indicated that households that previously engaged in off-farm livelihood households were more adaptive to diversification, and hence recovered equally well due to the earning from wages, and thus were more resilient.

It is important to create synergy between evictees and the oil sector, since this emerging sector offers markets for products and income to aid recovery, and therefore contributes to resilience. It goes without saying that the most important solutions will come from national focus on the welfare of people, and from not sacrificing the livelihoods of thousands of marginal citizens in the name of

development at the national level. It has been said that the quality of a society can be measured by how that society treats the least favoured individuals. Enhancing the resilience of smallholder farmers is of primary importance. This can be achieved through maximizing the production potential of the fragmented plots available and supporting them to build on local knowledge, and by protecting and improving soil and water resources. Smallholder farmers and agro-pastoralists lacked capacity to withstand post-eviction shocks because of their inability to adjust and adapt to shocks in real time. Little is known about the actual consequences that evictees have on hosting communities, which is an important area of further investigation.

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