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Vulnerability among Mobile Workers in Timber harvesting livelihoods in Uganda

Peter R. Atekyereza
Associate Professor
Makerere University Kampala
Uganda

Justine A. Ayebare
St. Lawrence University
Kampala
Uganda

Godforido Musiimenta

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Athens Institute for Education and Research
8 Valaoritou Street, Kolonaki, 10671 Athens, Greece
Tel: + 30 210 3634210 Fax: + 30 210 3634209 Email: info@atiner.gr URL: www.atiner.gr
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Peter R. Atekyereza

Justine A. Ayebare

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Abstract

The sale of timber or wooden products and subsequent satisfaction depend on persons whose livelihoods are based on harvesting timber. This article explores livelihood processes and outcomes among mobile workers in timber harvesting activities. Findings indicate that timber harvesting is more profitable for timber concessioners than for workers who are directly involved in harvesting activities. Mobile timber harvesting workers start their livelihood young, they have limited or no formal education and they are not able to negotiate favourable work contracts. Furthermore, workers come from particular social and economic backgrounds. Consequences reflect deteriorating livelihood capital assets, strong but in-ward looking social capital and less financial returns compared to their input. The study concludes that timber harvesting livelihoods for mobile workers make them and their families chronically vulnerable due to their labour quality, nature of work and payment processes. The vulnerability is transferred across generations. Policy change is necessary to reverse this trend.

Keywords: Vulnerability, Livelihoods, Timber, Harvest, Mobile workers, Lumbering, Policy

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Introduction

Work essentially gives workers satisfaction and improves their social and self esteem because it is through work that we get the means to satisfy our individual, family and societal material and non-material needs. However, vulnerability arising from various forms work activities leads to exploitation and ultimately undermines satisfaction and self-esteem. With increasing populations and sluggish economic growths, productive work today is reducing. Despite the fact that every able-bodied adult person is entitled to decent work, current levels of unemployment which continue to worsen may not allow this. By 2012, there were 200 million unemployed people and the figure was projected to rise to 206 million by 2016[1]. Most of the unemployed are young people[2] [3] [4] [5] [6] with most of them resident in Sub-Saharan Africa (SSA) and South East Asia[7]. SSA has the highest youthful population in the world with 28 percent of its population ranging from 12 to 24 years[8]. This is mainly because of the reduced capacity of SSA economies to facilitate the creation of new jobs.

In Uganda, the development agenda over the last 30 years has been to improve the citizens' well being by reducing vulnerability, equalising opportunities and transforming livelihoods[9]. Despite the development efforts, chronic poverty still exists with 24.5 percent (approximately 8 million people) living below one US dollar and twenty five cents a day while 42.9 percent (around 13 million People) are non-poor but insecure[10]. Most people are engaged in different activities for work with heavy concentration in the private informal sector especially in agriculture[11]. Uganda has over 78 percent of the

[1] International Labour Organisation (ILO), 2012. Global Employment Trends 2012 : Preventing a Deeper Jobs Crisis. Geneva: International Labour Office. Available at http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_171571.pdf. p.9

[2] Sarr, M.D., 2000. "Youth Employment in Africa: The Senegalese Experience." Background Paper No. 3, UN/ILO/. World Bank Brainstorming Meeting on Youth Unemployment. New York: UN Secretariat.

[3] Department for International Development (DFID) (1998) Sustainable Rural Livelihoods: What Contribution can we make? London: Department for International Development.

[4] UNFPA. 2007. Framework for Action on Adolescents and Youth: Opening doors with young people: Four Keys. New York: UNFPA

[5] Haub, C. and Kent M. 2009. Population Reference Bureau 2009. World Population Data Sheet.

[6] ILO, 2012

[7] Borode, M. 2011. Higher Education and Poverty Reduction among the Youth in Sub-Saharan Africa. European Journal of Educational Studies 3(1): 149-155

[8] UNFPA, 2011, p.

[9] Ministry of Finance, Planning and Economic Development (MoFPED) (2012) Poverty Status Report: Reducing Vulnerabilities, Equalising Opportunities and Transforming Livelihoods. Kampala: Department of Economic Development Policy and Research Department, MoFPED.

[10] Uganda Bureau of Statistics (UBOS), 2010, Uganda National Household Survey 2009/10: Socio-economic Module-Abridged Report. Kampala: Uganda Bureau of Statistics. p. ix

[11] MoFPED, 2012

population below 30 years[12] and has the youngest population in the world and yet most of these youth (62 percent) are not employed[13]. In addition, the illiterates are more likely to be available for any work than the literates. So whereas young people are supposed to be agents of change, most join adulthood when they are still poor and dependent. It is from this perspective that the vulnerability of the mobile workers involved in timber harvesting activities from their youthful years needs to be understood.

The value wood and timber dates back to the pre-historic stone age. Wood and timber are not only critical for furniture but critical to day-to-day life and all economic sectors such as agriculture, mining, construction, transportation, printing and publishing, etc.[14]. Uganda also has livelihoods based on tree plantation and management but its forest cover has reduced by 26.3 percent 1990[15] and so the role of lumbering and livelihoods that depend on it cannot be over-emphasized. Traditionally most forests were natural and largely un-gazetted but held by the government in public trust. Today, natural forests are declining and private planted forests are on the rise. Mobile pit-sawing and stationary plantation-based sawmills owned by government used to be the main tree harvesting methods. Tree harvesting, especially for timber, was done by particular individuals and family for internal local markets and household consumption compared to today when tree harvesting has turned into a lucrative commercial activity involving people beyond family and taking place away from home.

According to Kennedy[16], people who have historically been involved in lumbering are those who cannot access better paying or professional jobs. Pit-sawing was the first method of tree harvesting and has persisted to today. In England, alternative methods of saw mills did not pick up easily because of hostility from mobs which were against labour-saving technologies. In Uganda, on the contrary, the persistence of pit-sawing was due to occupational closure created by the first people engaged in the trade. Forest conservation in Uganda does not favour large static saw mills since forests are small and scattered and their use is restricted[17] and hence most tree harvesting-based livelihood activities are mobile within and beyond the national borders. The livelihoods around timber harvesting are critical to national and rural poverty reduction due to high demand and profitable market for timber products. Despite this importance, studies on vulnerable populations have given little attention to

[12] UBOS, 2010

[13] Lule, A., 2013, 62% of Uganda Youth Jobless-Report. The New Vision-uganda's Leading Daily, February 01, 2013. http://www.newvision.co.ug/news/639446-62-of-ugandan-youth-jobless--report.html (Accessed: Saturday, June 07, 2014)

[14] Kennedy, J., 2004, The Lumber Industry and its Workers. Chicago: The Industrial Workers of the World. Chapter 1

[15]Butler, R., 2006, Uganda: Environmental Profile. Available at Website: http://rainforests. monga bay.com/20uganda.htm (Downloaded on 5/30/2014 4:43pm)

[16] Kennedy, 2004, Chapter 2

[17] Kambugu, R.K., Banana, A.Y. and Odokonyero, G., 2010, Chainsaw milling in Uganda, ETFRN News 52: December 2010, p. 4

timber-harvesting-based livelihoods[18] as well as negligible legal and policy support. Policy frameworks have mainly focused on firewood consumption[19] and managing encroachment of forest acreage[20] [21] [22]. Hence, there is little information available on the livelihood structure and there are no statistics to show the actual number of people involved in the business.

The objective of the paper is to describe and explain stresses and shocks, risks and vulnerabilities associated with mobile workers in timber-harvesting livelihoods i.e. the pit or chain sawers, saw millers, loggers, carriers, supervisors, etc. The paper describes the actors in the tree-harvesting-based livelihoods who dominantly stay in the forests; explains the chronic nature of the vulnerabilities of the livelihoods and lastly explains how the vulnerabilities are transmitted from one generation to another.

Methodology

Research Design

The study used an exploratory design to understand the nature of people involved in tree harvesting livelihoods, documenting their transition process from homes and places of work, documenting risks and vulnerabilities associated with livelihoods for better integration with health service provisioning. According to Stebbins[23], an exploratory design is practically helpful when there is very little information available on the area of study. The study explored livelihood processes and outcomes of timber harvesting with particular reference to the vulnerabilities encountered. The collection of data was done in two phases between 2011 and 2013. Phase one was based on a sample survey of individual mobile timber harvesting workers to identify livelihood (especially health) issues on which to focus the subsequent deeper qualitative investigation. Phase two used qualitative methods of Key Informant

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[19] Republic of Uganda, 2001, The Uganda Forestry Policy 2001. Kampala: Ministry of Water, Lands and Environment. p.

[20] Agea, J. G., J. Obua and B. Fungo. 2009. Efficacy of Forestry Conservation Policy on Rural Livelihoods in Uganda: Evidence from Mabira Forest Reserve. The Social Sciences 4 (3): 295-303, 2009, p

[21] Otieno, A.C., M. Buyinza, R.A. Kapiyo and B.O. Oindo. 2013. Encroachments and Deforestation in Uganda: A case of West Bugwe Central forest Reserve, Busia District. Research Journal of Applied Sciences 8(8): 407-417. p.

[22] Sayre, R., P. Comer, J. Hak, C. Josse, J. Bow, H. Warner, M. Larwanou, E. Kelbessa, T. Bekele, H. Kahl, R. Amena, R. Andriamasimanana, T. Ba, L. Benson, T. Boucher, M. Brown, J. Cress, O. Dassering, B. Friesen, F. Gachathi, S. Houcine, M. Keita, E. Khamala, D. Marangu, F. Mokua, B. Morou, L. Mucina, S. Mugisha, E. Mwavu, M. Rutherford, P. Sanou, S. Syampungani, B. Tomor, A. Vall, J. Vande Weghe, E. Wangui, and L. Waruingi. 2013. A New Map of Standardized Terrestrial Ecosystems of Africa. Washington, DC: Association of American Geographers.

[23] Stebbins, R.A., 2001, Exploratory research in the social sciences, Sage Publications, London.

Interviews (KIIs), Focus Group Discussions (FGDs) and observations to understand the contexts and meanings of the issues explored in the first phase.

Study Population and Area

The population of study from which the data was collected was mainly men and some women who were involved in tree harvesting activities of felling and logging of trees, pit-sawing, saw-milling, carrying timber to collection sites, supervision of the harvesting process and concessioners. Due to the nature of the livelihood activities, respondents were sampled from their homes of origin, work sites and transition points. At the end of the field data collection, the respondents had been sampled from 2 transition points in Kampala, two places of origin and 20 work sites across 10 districts in Uganda (i.e. Arua, Apach, Soroti, Kween, Bukwo, Kapchorwa, Gulu, Luwero, Kyenjojo, Mubende, Kyegegwa, Kabarole, Kibaale, Mbarara, and Kabale).

Sample Size and Sample Selection

Normally quantitative sample sizes are pre-determined using scientific formulae and procedures[24]. However, sampling in this study was influenced by the need to get to the hidden and mobile population of people involved in timber harvesting wherever they could be found. Hence, the sampling procedure aimed more at capturing the hidden and hard to reach populations[25] [26] [27]. Six Key Informant interviews and six Focus Group Discussions (FGDs) with tree harvesting workers were done.

Materials and Methods

A total of 123 respondents were interviewed in phase one of the quantitative survey. These respondents were interviewed from the work sites to provide the research with the on-site picture of the conditions under which workers live and work. In phase two, a total of 6 FGDs were held with mobile timber harvesting workers across different age groups i.e. with those aged over 40 years, those aged between 25 and 40 and the young ones aged below 25 years. In addition, a total of 6 key informant interviews were conducted with individuals who had knowledge and experience on the lumbering process and outcomes. These were held with contractors or concessioners, elders in the village where the mobile timber harvesting workers originate, former lumberpersons, wives to lumberpersons and a former supervisor.

[24] Sarantakos, S., 1997, Social Research, 2nd Ed. Palgrave Publishers Limited.

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[27] Aldana, B.U. and Quintero, M.A. 2008. A Comparison of three methods of sampling hard-to-reach or hidden populations. Pensamiento Psicolôgico, Vol.4 No. 10, pp 167-176

Data Analysis

In order to make sense of the data collected for the purposes of explaining the study objectives both quantitative and qualitative data processing and analysis were done. For quantitative data analysis, questionnaires were edited and SPSS version 17.0 was used for data entry, cleaning and analysis. Quantitative data analysis aimed at deriving the frequencies and cross tabulations to capture descriptions of persons involved in lumbering, livelihood assets and vulnerabilities. Content analysis was used to analyse the qualitative data to find out the meanings and contexts of the livelihood processes and outcomes and how these affect the well being of mobile timber harvesting workers.

Ethical Considerations

The study was done with approval of the National Council of Science and Technology (NCST) under the broader Sida Research support to Makerere University. Since the study was on the processes and outcomes of livelihoods in reference to their health service delivery implications and not on their individual privacy, no ethical clearance was required.

Findings

The presentation of the study findings starts with the demographic characteristics of the respondents after which vulnerability of the livelihoods in terms of capital assets is presented.

Socio-demographic Characteristics of Respondents

Demographic characteristics describe the interviewed persons engaged in timber harvesting livelihoods and how they are involved. Table 1 shows the characteristics of the study respondents.

Table 1. *Demographic Characteristics of Respondents*

Demographic Variables	**Frequency**	**Percent**
Age Range (n=123)		
Below 18 years	10	8.1
18 – 30 years	59	48.0
31 – 40 years	33	26.8
41 – 50 years	19	15.4
Over 50 years	02	1.6
Formal Education (n=119)		
Never been to school	2	1.7
Primary	96	80.7
Secondary	20	16.8
Other	1	0.8
Marital Status (n=122)		
Single	34	27.9

Married	88	72.1
Ethnicity (n=123)		
Mukiga	117	95.1
Sabiny	4	3.3
Muganda	2	1.6
Religious Affiliation (n=123)		
Catholic	84	68.3
Protestant	32	26.0
Muslim	3	2.4
Pentecostal	3	2.4
No religion	1	0.8
Type of Actor (n=123)		
Pit-sawer	72	58.5
Saw-miller	16	13.0
Chain-sawer	7	5.7
Logger	11	8.9
Carrier	13	10.6
Supervisor	4	3.3
Migration Status (n=120)		
Migrant but now resident	4	3.3
Born here	4	3.3
Only here for work	112	93.3

The study findings show that most of the respondents are the young and energetic section of the population with age ranging from sixteen to fifty three years. Over half of the actors (56.1 percent are aged 30 years and below with an average age of 33 years. However, some of these people start the livelihoods activities as young as 14 years. Timber-harvesting livelihoods are generally in a male-dominated sector save for activities of carrying timber or other timber-harvesting products. Women carriers were only found in the Bukwo and Kween districts of eastern Uganda. In terms of formal education, the actors are generally graduates or drop-outs of primary education. By ethnicity, they are dominantly Bakiga from the Kigezi region. In terms of religion, a majority are catholic compared to other religions with most of them married.

Actors involved in tree-harvesting livelihoods include contractors, loggers, pit-sawers, chain-sawers, saw millers and carriers but pit-sawers dominate the trade. Contractors are individuals or companies that identify planted forests or bid for forests gazetted and managed by the National Forestry Authority (NFA) and recruit people to harvest timber from these trees. The loggers fell trees and roll them to the sites for pit-sawing or saw milling. Pit-sawers use the hand saw on a pit site to turn the tree logs into timber while chain-sawers use powered chain saws for cutting logs and milling the timber. Saw millers use the saw mill machine system to turn tree logs into timber. Carriers are the persons who carry timber from harvest sites to collection sites or stores while supervisors are the persons appointed by contractors or concessioners to oversee the other workers in the forests. They are supposed to keep stock of the tools, equipment, food

and other supplies, keep records of the timber output per person per period of time, etc. The final payments of each person depend on the records kept by the supervisor and submitted to the contractor. Further analysis should that description of these lumberpersons shows that there is a relationship between the type of worker and ethnicity, religion and migration status.

Table 2. *Relationship of Type of Actor and Ethnicity, Religion and Migration Status*

Correlations of Type of Actor with Ethnicity, Religion and Migration status					
		Type of Actor	Ethnic group of respondent	Religious Affiliation of Respondent	Migration status at place of work
Type of Actor	Pearson Correlation	1	.325**	.333**	-.318**
	Sig. (2-tailed)		.000	.000	.000
	N	123	121	123	120
**. Correlation is significant at the 0.01 level (2-tailed).					

Apart from two chain-sawers who were from Buganda and four carriers who were from Sabiny, the rest of the respondents were from Bakiga. In terms of religion, all categories of actors were dominantly Catholic followed by Protestants. Three Pentecostal Church believers and one person without any professed faith were carriers while the 3 Muslims are equally spread out among pit-sawers, chain-sawers and loggers. As far as migration is concerned, apart from one chain-sawer and 3 carriers who were born at the visited work sites and the two pit-sawers and 2 supervisors who were permanent migrants at work sites. The rest were at the sites purely for lumbering work.

Vulnerability of the Livelihoods

A livelihood refers to a way of living and the necessary resources needed to support that type of living[28] [29]. There are five capital assets that have been identified to be essential for success and sustainability of any livelihood. These include human capital (the quality of human labour and ability to work), social capital (trusted, dependable and reciprocal social relations), natural capital (god-given or natural resources), physical capital (exchangeable assets and their supportive infrastructure), and financial capital (incomes, savings, credits and other monetary reserves). Subsequent adaptations of the livelihood analysis framework have added political capital in reference to power and capacity to influence decisions to one's advantage. The context in which people live

[28] DFID, 1998, p.5

[29] Chambers, R. and Conway, G., (1992) *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century.* IDS Discussion Paper 296. Brighton: Institute of Development Studies (IDS).

greatly influences asset acquisition in terms of creating them, determining access, and influencing rates of asset accumulation. This context is characterised by particular development policies, institutions and processes. People who have more assets are more likely to have greater livelihood options with which to pursue their goals and reduce poverty compared to those who do not.

Human Capital Assets

Human capital assets relate to the quality of skills, health status and ability to work. Workers in tree harvesting are informally taught skills, which are specific to timber harvesting and most require less training rigor and time. These skills relate to tree felling and logging, carrying of timber or other sawing products, pit-sawing, saw milling and supervision. The skills and knowledge do not require high formal education. These livelihood skills are informally acquired from friends and relatives (see Table 3).

Table 3. *Source of Training for the Livelihood skill (n=101)*

Who taught you the Livelihood activity?	**Frequency**	**Percent**	**Cum. Percent**
Brother	20	19.8	19.8
Friend	54	53.5	73.3
Uncle	14	13.9	87.1
Father	7	6.9	94.1
Self	3	3.0	97.0
Other (*Cousin, Brother in-law*)	3	3.0	100.0
Total	101	100.0	

According to Table 1, most of the respondents had basic primary education or no formal education at all. Hence, ultimately their knowledge is restricted to the work they do and their ability to work is greatly influenced and affected by their limited skills, physical health and ability to move to where the concessioners find the trees. Most of these workers do not have alternative skills that can allow them access other forms of employment.

The health of most lumbering workers is greatly affected by their exposure to occupational hazards mainly characterized by accidents and injuries. Workers are also prone to malaria and typhoid because of the work environment. Workers use herbs in the forests to treat simple injuries or sickness. However, for more complicated sickness or serious injuries, they seek treatment from neighbouring government health centres or private clinics. After treatment, medical bills are deducted from their final payment. This is not a regular practice because most contractors have some assorted drugs on site which encourages self-medication. Self-medication has its associated health risks. As far as HIV and AIDS are concerned, most of the workers are susceptible to HIV infection because of lack of information and sensitization

about its modes of transmission and how to protect themselves using condoms, for example, which they refer to as *Karinda Magara* or life protector.

Historically, lumbering activities in Uganda have been associated with high susceptibility to sexually transmitted diseases especially gonorrhoea, syphilis and currently HIV. One former pit-sawer said "*pit sawing had money in the past. When we would be paid the women used to find us in the forest where we would be working and we would have a nice time. But afterwards most of us would be infected with gonorrhoea. We would make a line of our buttocks to be injected with penicillin using one syringe. Timber harvesting then was good but two things could not allow us to be rich – women and alcohol*". Study findings further show that actors in timber harvesting have casual sexual workers because of the common sexually transmitted infections. A saw miller said, *"all these workers in the forests are womanizers and they rarely use condoms"*. Due to indifference or ignorance, most workers cannot differentiate symptoms of HIV/AIDS from those of diseases like malaria manifested through general body weakness. The workers who are living HIV are vulnerable to quicker HIV progression to AIDS because of lack of adequate nutrition, inaccessible and unaffordable supportive facilities for medication. In addition, workers mainly depend on maize meal (locally known as *posho*) and beans for their daily diet. Though sanitation facilities were reported to be adequate, access to safe and potable water was very difficult.

Social Capital Assets

Social capital concerns the relations of mutual trust and support among people in society. The study found that timber harvesting workers have social bonding amongst themselves, with their families, contractors and work supervisors. However, genuine social capital is among relations that are already socio-economically vulnerable. The stronger the relationship is with their contractors which is work based. As long as the workers are healthy and energetic to carry out their timber harvesting activities normally, the relationship is healthy. However, when workers fall sick and get serious injuries, the work relationship changes. Sometimes, they are sent back home to their originally vulnerable families without any support. One former supervisor said, "*when workers fall sick, they become a liability. It is also risky to take a dead body back to the relatives when the person was taken alive and healthy. To avoid such nasty situations, when a worker becomes too sick, he is put on the bus to take him back home. There are some who have died on the bus before they reach home"*. Timber harvesting livelihoods are characterised by working far away from relatives, friends and spouses. According to the FGD with young men held in Kabandama village, Rubanda County in Kabale, these workers are the same group that traverses the whole country for timber harvesting activities. They said, *"we can go anywhere as longer as we get what to do in the sector of timber processing"*. Study findings also show that apart from 4.1 percent of the workers who have relatives at work sites, a majority (95.9 percent) do not and 98.4 percent reported that they have friends where they work though 92.7 percent of the friends are actually their own workmates.

Table 4. *First Point of Call in case of a Problem (n=123)*

Who do you go to when you have a problem?*	**Tally**	**Percent**
Supervisor (*aka Manager*)	98	79.7
Friends	16	13.0
Contractor (*aka Concessioner*)	08	6.5
Family members (*including parents*)	04	3.3
Local Area Chairperson	03	2.4
Workmate	01	0.8
Police	01	0.8

**Multiple Responses were possible*

Table 4 shows that workers' first point of call, when they have a problem, is their manager or supervisor followed by friends and the contractor. Only one person reported going to the workmate. The responses show that the person to whom they go for help depends on the nature of the problem at hand.

In addition, workers in timber harvesting do not have organised groups to strengthen their social capital and avoid abuse of their rights. They are also mostly not liked at the places of work. This is attributed to what they do in these communities within their free time and especially after they are paid. After payment most men interact with the community to look for alcohol and women. According to the Contractor who had a work site in Bundibugyo in Western Uganda, "*they normally go to bars to buy beer in the evenings and weekends especially when they have loaded timber on trucks and have been paid some money. They use this money to get women for sex. It is only lack of money that limits their sexual encounters otherwise they do not spare the women. Some buy and use condoms while others do not"*. This behaviour creates hostile relationships with their host communities. In 2014 alone, two pit sawers were killed during clashes with communities over sexual relationships with wives or daughters of the host communities. Hence, whereas social capital at home (place of origin) is poor because of their absence, it is worse at the work site due to such hostile relationships. In some communities, especially in northern and Eastern Uganda, language barrier exacerbates this hostility.

Physical Capital Assets

Physical assets refer to exchangeable and transferable assets plus the supportive infrastructure for their use and exchange. Some of these assets include domestic animals, electronic equipment like mobile telephone sets, radios, bicycles or motor cycles, etc. The study established that some of the workers in tree harvesting have built houses or bought land or building materials like iron sheets, domestic animals like sheep and goats, cows, etc. The domestic animals are usually very few and often meant for bride wealth. However, when the workers need to go back to the forests, they have a problem of who to look after them or have little or no land on which to graze them and finally some sell them off. The most common assets that the respondents possessed were telephones and radios (see Table 5).

Table 5. *Ownership of Physical Assets*

Physical assets	Do you have access to the asset?				Total	
	Yes		NO			
	Freq	Percent	Freq	Percent	Freq	Percent
Telephone	78	63.4	45	36.6	123	100.0
Radio	69	56.6	53	43.4	122	100.0
Television	01	0.8	122	99.2	123	100.0

The findings from Key Informant interviews and Focus Group Discussions show that some workers have invested in assets like land, domestic animals and iron sheets. However, these assets are often resold when they run out of money or have to settle debts. However, selling off such assets tends to create strained relations in their families. One young man said, *"When I got Rubboni, I bought two goats and left them at home. When I was still away I was told that one of the goats was sold by my wife to meet family needs. I then refused to go back home*" (Pitsawer aged 26 years found at a site in Kweni). So, acquisition of physical assets takes place at a very slow pace and their sustainability is also unpredictable.

Natural Capital Assets

Natural capital relates to the resources deriving from nature such as land, forests, water bodies, air, flora and fauna. As the lumber persons go about their regular activities, they interact with these resources differently depending on the type of lumbering activities, where the activities are located and where lumberpersons originate. At the place of origin especially in Kigezi, there is land shortage and hence land is expensive yet it is an important resource since most people are farmers. Timber harvesting is an activity which is greatly affected by weather conditions, for example, the rainy season badly affects the output of workers since it reduces speed of production and yet payment is based on unit output. This reduction in production leads to extension of contract periods. The lumberpersons produce less timber while the carriers also carry few. Rainy seasons also negatively affect accessibility of the work sites especially when such areas have slippery slopes. According to one saw miller, *"this is not restricted to only rainy season but to all weather changes. When it rains, it is hard to work in places which are swampy because water fills up. There is a lot of humidity and many mosquitoes breed hence we get malaria. In the dry season, there is shortage of water especially in the Bunyoro region. Remember we are deep in forests hence we have to dig some wells and sometimes we share water with animals. There are also forest areas with harsh terrain which is slippery and normally loggers fall when logging to the racks resulting in many accidents such as being clamped between logs"*. Hence, weather conditions which have become more erratic with climate change greatly affect lumbering activities.

The study further established that workers have varied access safe potable water at work sites. Access to such water varies with the location of the activity. However, places in eastern, northern Uganda and some parts of central Uganda were reported more in connection with this problem. During the FGD with young men in Kabandama village, Rubanda county, it was reported, *"sometimes the water is not good but there is no alternative. What you find it is what you fetch! There are places where you cannot get good water like Luwero, Gulu and Soroti. Good water is in Mbarara, Kabale and Kapchorwa. In swampy areas, normally the water fills up we fail to work and sometimes we get fever*[30]*"*. In relation to swampy areas, one former supervisor reported, *"one time along the Kampala-Masaka road, lumbering persons were felling trees near the swamp. One tree fell and hit one of the men and buried him in the swamp. His body could not be recovered and the other workers abandoned this site for another site"*. Though wild animals were reported to be within the work sites, no negative impact was reported apart from snake and mosquito bites.

Financial Capital Assets

Financial assets refer to stocks of money, savings, pension, remittances etc. that bail out a person in need or bad times. The primary reason for engaging in timber harvesting livelihoods is to get money to meet individual and family needs as well as make savings for their socio-economic wellbeing. Men normally engage in activities of pit-sawing, chain-sawing, saw-milling, logging or carrying timber for purposes of earning money so that they can get essential requirement for constructing (especially iron-roofed) houses, marriage (especially bride wealth), buy essential family needs, invest in more assets like domestic animals and land, pay fees for their children's education, meet medical expenses, etc. They accept to be mobile to wherever they can find these forms of work because they believe that by doing so, they will be socio-economically better. However, the study found that the nature of their work tends to lead to debt bondage.

Before departure from their homes for work, mobile workers in timber harvesting are given advance payment (popularly known as *Rubbooni*). Rubbooni is very essential in the lumbering trade in Uganda and among people of associated livelihoods. While conducting a Focus Group Discussion at the place of origin in Kabandama village, Rubanda East Constituency, Kabale District on 29th May 2013, one young man while passing by the FGD meeting said "*I thought these people had come to give Rubbooni*[31]*. These are just wasting our time"*. Upon receiving *rubbooni*, the prospective worker signs a one-sided agreement expected to last averagely between 3-6 months. On average each saw miller earns a net pay of about 500,000/= [32]on each contract or month. It was reported that, assuming there is no interruption in the contract

[30] Usually fever is used interchangeably with malaria.
[31] The closest English interpretation of this concept according to the study is re-bonding.
[32] This is after the required deductions have been made.

(for example, breaking of the miller blade or when there is bad weather), such a worker will need six contracts to build a house of 30 iron sheets (the weakest type of *2.5feet x 10feet Gauge 32*). This implies working for three years without stopping to earn three million Uganda shillings[33]. It was also reported that working under similar conditions, a worker will need to work for four years (i.e. eight contracts) to purchase one acre of land; or four contracts to secure bride wealth to marry a wife. Bride wealth ranges between Uganda shillings 800,000/= and 2,000,000/= and sometimes one may have to sell part of the land to get the bride wealth. For a mobile worker in timber harvesting to accomplish the above three achievements (i.e. get land, build a house and marry), he will need to work for 18 contracts which translate into nine years. Some of the workers fail to balance off the advance payments upon final payment and are forced to sign into another contract to make good their debts (known as *Okupindiramu*[34]).

Workers are given different inputs to enable them do their work on signing the contract. Apart from money advance, other inputs include gumboots, pangas, axes, hoes, food, cooking utensils, fuel, v-belts, saw-blades and machine spares, etc. In the forests, lumbering persons build make-shift tents covered with trampoline and they sleep on mats. Most of these inputs are supplied by the contractor and when the contracts end, they stay at the work place. The cost of gumboots and blankets is deducted at payment because they stay with the worker.

Table 6. *Inputs for the Lumbering Process*

What inputs do you get before the contract starts?	**Tally**	**Percent**
Food	94	76.4
Tools	88	71.5
Drugs	65	52.8
Trampoline	43	35.0
Utensils	23	18.7
Fuel and lubricants	21	17.1
Advance payment (*Rubbooni*)	06	4.9
Transport	02	1.6
Clearance from Local Leader	01	0.8

**Multiple responses were possible*

Overall, at the time of the interview, 57.6 percent compared to 42.4 percent reported financial savings. Though most workers reported that they are paid little, 5.2 percent find the income they earn enough to meet their needs, 46.1 percent find it somehow enough, 35.7 percent reported that they meet their needs with difficulty while 13 percent said that the income earned could not meet their needs. This may explain why 55.5 percent of the respondents

[33] This is currently eequivalent to USD $1,200.
[34] Signing a new contract to pay off outstanding debts from the previous contract.

reported that they owed money at the time of interview. The amount owed ranged from 30,000/= *(USD 12.-)* and 3,000,000/- *(USD 1,200.-)* but a majority (87.3 percent) owed between 30,000/= and 250,000/= *(USD100)*. It was also reported that different actors earn differently. The study found that saw millers get their payments monthly or at the end of the contract while pit sawers are paid before they start working (through *Rubbooni*). Pit sawers, for example, are advanced money when still at home and are paid this money while drinking beer in bars. When they sober up and find that they have drunk the advance payment, some try to run away to another contractor. However, this may even result in worse financial status since when caught, they are forced pay the money advanced and its interest. According to one contractor, *"there is one young man who took my rubbooni and ran away from the forest before finishing the contract. The good thing is that the courts of law are helping us. When I located him at home, he was arrested, taken to court and sentenced to six months imprisonment in addition to being required to refund the money plus court fees. The family of this young man sold the land to rescue him"*. On the other hand, saw millers are paid full amount less the deductions for transport, blanket, gumboots and food. Such workers buy items going home and can even start building a house after two contracts. As a result, saw millers are reported to have developed themselves more compared to other actors.

In spite of the apparent financial exploitation, a saw miller said that pitsawers are not poorly paid as they claim and that they are better when compared with payment of an average civil servant. He said, *"pitsawers are advanced a rubbooni of 500.000/= (USD 200.-). The problem is that they are paid before they work and take a week or two before reporting to work".* A former pit sawer also reported that financial benefits from timber processing depend on the character of the person. He said, *"I started timber-processing work when I was very young before I started school. I was able to get money and get married. Workers of these days are very extravagant compared to those in the past. Those in the past used to plan, save and develop; you could buy land, a cow and other assets. Today, workers spend all the money they get on women or beers"*. In the final analysis, the study notes that where contractors are benevolent towards their employees, the workers have benefitted from employment. However, where contractors behave like Douglas McGregor's theory X managers[35], their employees earn little to take home or even end up successive contracts *(Kupindiramu)* to service their debt bondage.

Discussion

According to Coser[36], work has evolved over time from when people performed diffused roles to meet their individual, family and societal needs[37]

[35] Grint, K., 1998. The Sociology of Work, Cambridge: Polity Press, p. 124
[36] Coser, L., 1977, Masters of Sociological Thought: Ideas in Historical and Social Context. 2nd Ed: Florida: Harcourt Brace Jovanovian Inc.,

through the time characterised by a shift to division of labour and more specialised skills development especially with intensification of industrialisation and technologisation (*see* Durkheim[38]). However, this historical process has gradually exposed competition and conflict between groups of people who own and control resources for production of goods and services and those who own nothing except their hands and ideas (*see* Karl Marx[39]). These antagonistic economic processes and resultant exploitation started when some people started living on the surplus produced by others leading to the creation of economic social classes whose processes of continued survival and identity have resulted in alienation of work and workers. It is in the context of capitalist and globalised alienation that we see the vulnerabilities of timber harvesting workers exposed to in the work itself and the social relations therein. This vulnerability is not only due to climate change[40] but also relates to exposure to multiple shocks and stresses[41] which affect people's day to day life. In modern capitalism, the philosophy of 'Might is Right'[42] or what Joseph Schumpeter[43] explained as competitive destruction. Competitive destruction is when people only value acquiring money or wealth at any cost without ethical considerations or implications. Victims of such competitive destruction start to prioritise social risks over technical risks as Atekyereza argues in his explanation of vulnerability and HIV and AIDS[44]. Vulnerability in timber harvesting livelihoods reflects the ugly side of modern global capitalism amidst powerlessness.

According to Hodson and Sullivan[45], work is both a process and an institution with both social and technical determinants. It is seen as a process because it is the means through which people satisfy their needs. It is also an institution because there are rules, procedures and guidelines for doing work. Whereas technical determinants refer to non-human requirements that support work, social determinants are the social relations of work and the two influence level of fulfilment for both the worker and employer. In pre-colonial Africa,

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[37] Joseph, R.J., 2012. Parsons Pattern Variable and Social Change Analysis, Search and Research Vol. III No (3): pp 18-21, p.20

[38] Coser, 1977, pp. 129-136

[39] Ibid, pp. 76-87

[40] Sonwa, D.J., Somorin, O.A., Jum, C., Bele, M.Y. and Nkem, J.N., 2012. Vulnerability, forest-related sectors and climate change adaptation: The case of Cameroon, Forest Policy and Economics 23 (2012) 1–9

[41] Gillespie, S., (Ed)., 2006. AIDS, Poverty and Hunger: Challenges and Responses. Highlights of the International Conference on HIV/AIDS and Food and Nutrition Security, Durban, South Africa 14-16, 2005. Washington, D.C.: International Food Policy Research Institute.

[42]Redbeard, R., 2008. Might is Right. Australia: Libertine Press. Available at https://facebook. ereportz.com/pdf/uploads/RagnarRedbeard-MightisRight1597523858.pdf (Accessed on 12/15/2014 6:02:52 PM)

[43] Schumpeter, 1934 *cited in* Alvarez S.A., Agarwal, R and Sorenson, O., 2009, Handbook for Entrepreneurship Research: Interdisciplinary Perspectives. Birkhäuser

[44]Atekyereza, P.R., 2014. Deprivation, HIV and AIDS in Northern Uganda, African Sociological Review, Volume 18, Issue 1 (2014), 91-111, p. 106

[45]Hodson, R. and Sullivan, T.A., 1990, The Social Organisation of Work. California: Wadsworth Publishing Company.

every person did not only have a right but had the obligation to work to support the survival and progress of the extended family structure and wider society in the areas of economics, culture, politics and governance, security, environment and provision of essential services[46].

Vulnerability in terms of high probability of negative outcomes arising from uncertain events[47], results from susceptibility to risk. Susceptibility means exposure to risk and vulnerability of livelihoods refers to the impacts that occur at individual, household, community and other levels. Impacts are usually successive slow-moving often hidden processes but very destructive through which if one survives, they are left significantly impoverished[48]. In this discussion, we employ the sustainable livelihoods framework (SLF) to explain vulnerability associated with lumbering or timber harvesting. Vulnerability erodes the five capital assets or livelihood building blocks in different degrees depending on one's vulnerability context. The changes in livelihood assets produce different shapes of the capital assets pentagon. In our case, vulnerability of timber harvesting workers demonstrates declining access to physical capital and limited access to natural resources. Social capital is reducing because workers' assets are more outside the families and they do not have diverse skills to engage in alternative livelihoods. The reduction in social capital constrains ability to form strong beneficial work groups.

People engage in different livelihoods to improve the livelihood outcomes. Livelihood outcomes should be reflected in increased incomes, well being, reduced vulnerability, improved food security and more sustainable use of natural resources. In this study, the persons involved in timber harvesting livelihoods are either having stagnant or reducing livelihood outcome. In terms of increase in income, most lumber persons end in debt bondage. In relation to debt bondage, one site supervisor said,

The contractor can give workers advance money (*Rubbooni)* when he has not paid for tree in the forests or even not having any trees anywhere in order to block them to go to other contractors. Some contractors do not pay their workers at all or give them part payments at the end of the contract promising to pay them later some rarely do. Other contractors underpay workers. They grade the timbers into First, Second, Third and Reject classes in order to reduce the money they pay workers. For example, out of 1000 timber pieces, 500 are classified as 'Rejects' to reduce payments yet the contractor does not grade timber when loading and selling. Other contractors make workers sign unfair contract agreement upon giving rubbooni. Such contracts state that if one

[46] *See* Atekyereza, P., 2011, Changing Family Life in Uganda: Analysis of Family Forms and Functions among selected Ethnic Groups. Saarbrüken, Germany: Lambert Academic Publishing, chapter 8

[47] Holzmann, R., and Jørgensen, S., 2001. Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond, International Tax and Public Finance, Springer, vol. 8(4), 529-556.

[48] Savage, K., Petty, C. and Acidri, J., 2008, Livelihoods in Crisis: A Longitudinal Study in Pader, Uganda. Year Two Update. A Working Paper, November 2008. London: Humanitarian Policy Group, Evidence for Development and Overseas Development International.

defaults, he doubles the money received (*Site Supervisor, Bundibugyo, Western Uganda*).

Such employment relations do not allow most workers in timber harvesting livelihoods to increase their incomes.

In terms increased well being, livelihoods outcomes should improve people's sense of *"self-esteem, sense of control and inclusion, physical security of household members, their health status, access to services, political enfranchisement, maintenance of their cultural heritage, etc"*[49]. In this study, these values are hardly accessible to any of the workers in timber processing. Most workers, for example, do not have bargaining power in making contractual obligations and are separated from their families for a long time. Contractors do not give sufficient treatment to those who fall sick or allow them to go home before they have balanced off the money advanced to them. Workers are susceptible to many accidents like being hit by falling trees from which some have died. The free time that workers have is used to forget these problems temporarily by drinking alcohol or engaging in sexual activities leading to further vulnerability as opposed to sustaining their resilience. Furthermore, food security remains a serious challenge among timber harvesting workers and yet it is a core dimension of deprivation and vulnerability. In this study, workers are literally condemned to a single diet of maize meal (*posho*) and beans when at work sites. Their families at places of origin also do not fair any better because of absence of the main bread winner and rare remittances. Finally, the timber harvesting livelihood activities erode instead of leading to sustainable use of the natural resource base. As noted earlier, land is scarce at places of origin and hence the increasing population does not favour sustainable natural resource use.

Livelihood outcomes of timber harvesting livelihoods are often reflected in high mobility of household heads or key family members, increase in environmental degradation, depreciation of household physical assets, financial resources and strained social networks of support. This vulnerability is chronic because debt bondage starts before the activity continues through the activities and sometimes even after the activities. This is mainly as a result of failure to balance of the advance payments made by the contractors. Even those who balance off advance payments still face problems of alcohol consumption and prostitution. Furthermore, the vulnerability in timber harvesting livelihoods is also trans-generational because the occupational social closure promotes ritualised training of relatives and close friends in the trades. The vulnerabilities that befall current workers are transmitted to friends and off-springs unconsciously especially through sustained chain of illiteracy or low formally education.

[49] DFID, 1998, p.37

Conclusion

Work is and remains essential to human survival and societal progress. However, in order to achieve these two basic and other goals, work requires freedom from excessive vulnerabilities which do not allow workers to withstand and outlive livelihood associated stresses and shocks. Work trends of the livelihoods based on tree harvesting continue to rise and are bound to remain so in future due to the value and demand for wood and timber products. This is particularly so amidst the decreasing resource as a result of reduction in forest acreage[50].

The people whose livelihoods depend on tree harvesting in Uganda are specific and identifiable in terms of certain socio-demographic characteristics. In addition, such people are vulnerable in terms of livelihood associated capital assets e.g. natural, physical, human, social and financial). These are people who cannot find alternative employment because of their limited and mono-industry specific skills. Workers' limited formal education and resultant constrained ability to negotiate favourable contracts expose them to financial and other losses. Debt bondage through unfair financial advance payments and also unfavourable balancing of these advances on final end-of-contract payment make vulnerabilities of timber harvesting workers chronic. Furthermore, by the timber harvesting workers training their own relatives and friends in the same occupations, the vulnerabilities that they face are carried from one generation to another. Essentially, therefore, vulnerability among timber harvesting workers is chronic, characterised by slavery and transmitted through generations.

In order to address this historical challenge facing such workers like pit-sawers[51] [52], there is need for policy change to put in place a work framework that ensures decent work in tree harvesting. According to the International Labour Organisation[53], this framework should be based on four critical pillars of i) human rights in work, ii) protection of employment and incomes, iii) strengthening of social protection and social security, and iv) strengthening social dialogue. In all these pillars, the concessioners who contract the other workers have an important role to play particularly in reducing workers' vulnerability to financial losses that enslave them through debt bondage. It is such policy change that can reverse or reduce the current chronic and intergenerational vulnerability and enslavement characterising the work in tree harvesting in Uganda.

We recommend that the forestry policy needs to go beyond the concern over forest cover and encroachment enforcement to address the livelihood needs of people that depend on forests through others. There is also need to

[50]Butler, R., 2006.
[51] Kennedy, 2004.
[52] SA Magazine, 2014. Striving for Decent Work in the Forestry Sector. Available at website http://www.saforestrymag.co.za/articles/detail/striving_for_decent_work_in_the_forestry_sector (Downloaded on 5/30/2014 9:26 am)
[53] ILO, 2012, p. 2

improve accessibility to health services and other forms of support through contractors and supervisors after adequate training and re-orientation. Finally, there is need for an umbrella organization that can champion the rights of people involved in tree harvesting livelihoods

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