Journal of Refugee Studies Vol. 0, No. 0

Socio-economic Consequences of Displacement and Resettlement: A Case on the Planned Oil-refinery-development Project in the Albertine Region of Uganda

CAROLINE ABODA

Department of Geography, Geo-informatics and Climatic Sciences Makerere University, Kampala, Uganda
abodacaroline@gmail.com

PAUL VEDELD

Department of International Environment and Development Studies (Noragric), Norwegian University of Life Sciences, Ås, Norway

PATRICK BYAKAGABA

Department of Environmental Management, Makerere University, Kampala, Uganda

FRANK MUGAGGA

Department of Geography, Geo-informatics and Climatic Sciences Makerere University, Kampala, Uganda

GORETTI NABANOGA

Department of Extension and Innovation Studies, Makerere University, Kampala, Uganda

TUMWINE FREDRICK RUGUMA

Department of Geography, Geo-informatics and Climatic Sciences Makerere University, Kampala, Uganda

PAUL MUKWAYA

Department of Geography, Geo-informatics and Climatic Sciences Makerere University, Kampala, Uganda

MS received December 2018; revised MS received July 2019

Millions of people are every year forcefully displaced from their places of residence and alienated from access to livelihood assets through large-scale development projects. This article examines different socio-economic consequences of displacement and resettlement caused by the planned oil-refinery site in Uganda. Household survey and interviews were employed to elicit the necessary data, analysed through descriptive statistics, logistic-regression and content analysis. Although the resettlement process exposed households to some benefits, most households were exposed to substantial risks. Over 81 per cent of households

experiencing displacement lost their land and experienced reduced resource access. The results also showed significant relationships between consequences and socio-economic characteristics of respondents in that both male and female respondents had access to more and productive assets; and larger land sizes and incomes were reported to have been more affected. Also vulnerable groups including females and those with low or no education levels were more risk-prone than before the resettlement. In future development projects, the government should take into consideration the effect of the displacement and resettlement on asset access.

Keywords: Socio-economic consequences, displacement and resettlement, Uganda

Introduction

Resource-rich countries endowed with and controlling oil and gas can greatly contribute to economic development and general prosperity (Gamu *et al.* 2015). However, those development projects could at the same time result in a variety of risks, uncertainties, denial of rights and deterioration of resource access and welfare for others (Bennett and McDowell 2012; Al Rawashdeh *et al.* 2016). The utilization of such resource endowments is often associated with large-scale projects, including the development of a variety of economic and physical assets such as dam construction for electricity and water, transport and roads development, and industrial construction (Terminski 2011). In many or even most cases, there is a massive and violent displacement leading to local losses of land, residential areas and general reduced resource access, often accompanied by social unrest and environmental degradation (Timmons 2013). Displacement and forced resettlement of people due to land acquisition for development projects have become global problems, especially in developing countries (Hyndman 2000; Terminski 2012; Mathur 2013). It is characterized by primary loss or reduction of productive assets and other vital livelihood resources on which communities depend (Cernea and Mcdowell 2000; Terminski 2012).

Globally, it is estimated that over 15 million people are forcefully displaced annually from their former places of residence by large-scale development projects (Terminski 2015). More than 250 million people have been displaced worldwide over the last 25 years according to World Bank (Environment Department) estimates. A classic example can be seen in countries such as Sudan and Nigeria. Development due to oil production displaced 174,000 people in Sudan (Terminski 2011), 80,000–100,000 indigenous Ogoni people in Nigeria (Watts 2004) and thousands of indigenous people in Southern Columbia following the construction of oil pipelines (Terminski 2011). Displacement and resettlement have often rendered people and communities, especially in developing countries, food-insecure, powerless, disempowered and destitute (Cernea and Mcdowell 2000; Oliver-Smith 2009). These risks cause displaced people to become more vulnerable to famine, suffering from

poor health conditions and living in conditions of uncertainty and fear (Mathur 2013).

The roles and responsibilities of men and women within households also change as families get separated and former social-support structures may deteriorate (Azmi 2014). The constrained ability to respond to, cope with or adapt to the negative consequences of displacement makes people more vulnerable compared to the intention of the intervention (Prenzel and Vanclay 2014).

Research on development-induced displacement and resettlement through the use of the Impoverishment, Risk and Reconstruction (IRR) model (Cernea 1997) has generated a new and huge amount of empirical data showing that displaced populations are subjected to impoverishments characterized by landlessness, homelessness, joblessness and social disintegration that the displaced populations (Ambaye and Abeliene 2015) suffer. This article seeks to explore the consequences of displacement and resettlement due to an oil-refinery-development project on the assets and outcomes of households in the Albertine region of Uganda. The Albertine region of Uganda is where commercially viable oil and gas reserves were confirmed in 2006 (Anderson and Browne 2011). The IRR model was applied in mapping the consequences of displacement and resettlement. The following research questions guided the study: What were the socio-economic consequences of displacement and resettlement schemes on household assets? How have households been affected by displacement and resettlement processes? How are the consequences of the displacement and resettlement processes associated with socio-economic and demographic characteristics of the affected population? This study is envisaged to generate more information on social vulnerability within the Albertine region, which provides a fuller understanding of the social-economic effects of displacement and resettlement due to large-scale land acquisition for development projects to guide future resettlements.

The IRR Model

The IRR model that informed this study is a theoretical model that has been widely used in displacement and resettlement situations to identify the risks that impoverish displaced people (McDowell 2002). These risks include: landlessness, homelessness, joblessness, marginalization, food insecurity, loss of access to common property resources, increase in morbidity and mortality, and social disintegration (Figure 1). The risks are interlinked and considered important in displacement and resettlement contexts (Cernea 1997; Oliver-Smith 2009). Cernea and Mcdowell (2000) argue that such studies are useful to ensure that countries implement socially and economically responsible resettlement programmes.

According to the framework, household exposure and sensitivity to the risks of displacement and resettlement processes affect household assets,

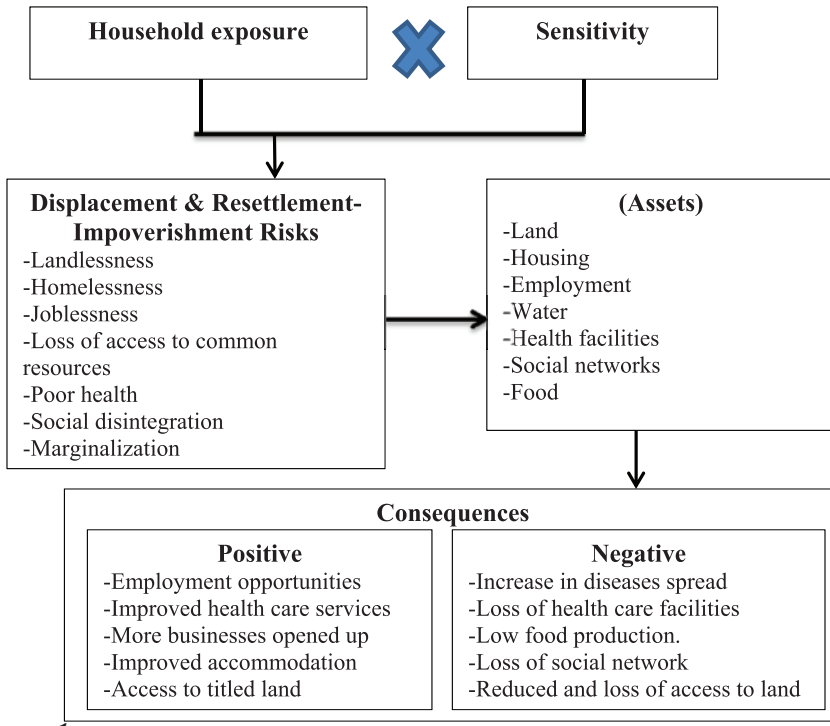

Figure 1
A Framework for Analysing Consequences of Displacement and Resettlement on Household Assets
Adopted from Turner *et al.* (2003), modified by Author.

hence leading to either positive or negative consequences. Individual households and communities are affected differently, even if exposed to similar risks of displacement and resettlement (Cernea and Mcdowell 2000). Exposure is the nature and degree to which a system such as a household is exposed to significant risks.

Sensitivity is the degree to which a system is affected, either adversely or beneficially, by stressors or shocks, such as, in this case, displacement- and resettlement-related risks.

Materials and Methods

Study-area Description

The study was conducted in Buseruka sub-county, Hoima district, in the Albertine region of Western Uganda (Figure 2). The Buseruka sub-county is located south-east of Hoima town along Kaiso-Tonya. Kaiso-Tonya is one area where oil concessions and production licences have been awarded to

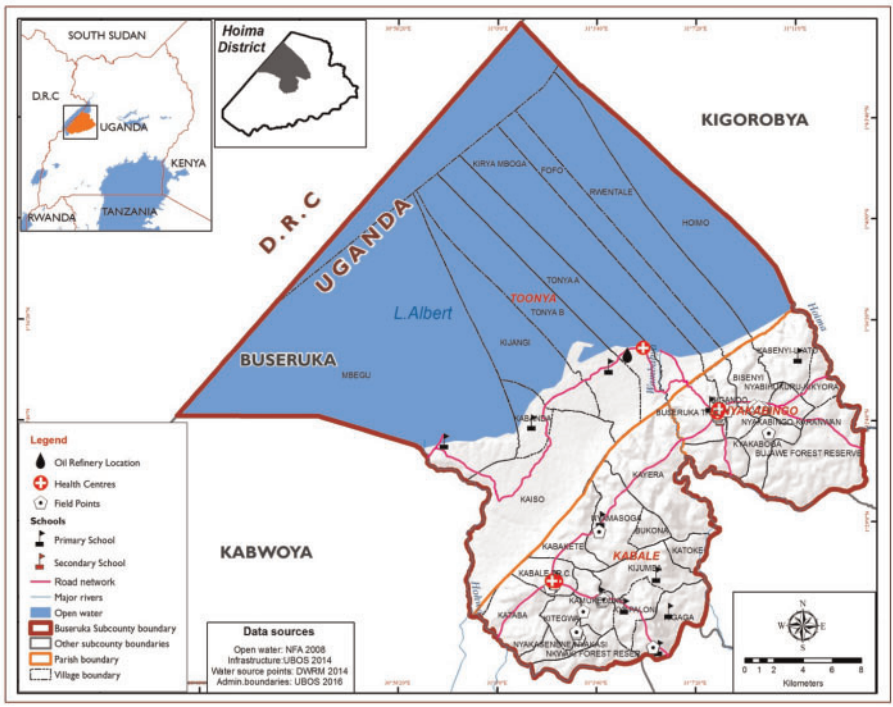

Figure 2
Buseruka Sub-county, the Oil Refinery and Villages Affected by the Displacement and Resettlement, Uganda, 2017

private companies by the Ministry of Energy and Mineral Development. Buseruka consists of three parishes that include Kabaale, Nyakabingo and Tonya. Kabaale parish is located 49 km from Hoima municipality and is the proposed construction site for the oil refinery. Acquisition of land for the oil refinery affected many local inhabitants, displacing over 2,221 households with a total population of more than 7,000 people (MEMD 2012). Those households were evicted from 13 neighbouring villages in Kabaale to pave way for the 29-km^2 planned oil refinery (MEMD 2012). The government purchased 553 hectares of land in Kyakaboga village, Nyakabingo parish within the same Buseruka sub-county, Hoima district. Kyakaboga village is where the affected families who chose land and house as the type of compensation were to be resettled (7.7 per cent of total sample). The land allocated to resettle these families is still within the oil-refinery area, approximately 15 kilometres from Kabaale (MEMD 2017), as indicated in Figure 1. The people of Kabaale parish traditionally derive their livelihoods from activities such as farming, petty businesses, hiring and selling family labour, and fishing around the shores of Lake Albert in Kaiso-Tonya and Kyeihoro village. The annual average income earned by the people of

Kabaale was estimated at US$2,530 (MEMD 2012) away from the resettlement areas.

Cash-compensation and Resettlement Processes

The planning process to acquire the 29-km^2 tract of land for the planned oil-refinery construction site in Kabaale by the government of Uganda started in 2012. Out of the 1,221 directly affected households, only 93 chose the option of resettlement (non-cash compensation) where a house and/or land equal to what was owned previously would be given. The other 1,128 (92.3 per cent) directly affected households opted for the cash-compensation alternative, in principle equivalent to the value of the land and properties such as houses, crops, graves and trees on it.

Research Design and Methods

Descriptive and exploratory designs were applied in which household surveys were conducted using a questionnaire designed with both closed and open-ended questions.

The household surveys were administered to the household heads if present or the spouse. If both were missing, any other adult in the household (>18 years old) would be targeted. Both displaced and host-community households were included in the study. Scudder (1999) defines displaced people as the project-affected persons, including not only those directly displaced through losses of homes and land, but also the host population receiving the displaced people. The total number of households in each parish was obtained through accessing parish and village registers from parish chiefs and local council chairpersons of each village. An initial sample size of 335 was determined from the total number of households, which was 2,078 within the two study parishes. The sample size was determined using Yamane's formula $n = N/1+Ne^2$, where N is the number of households and e is the acceptable error tolerance (Tejada and Punzalan 2012). A 5 per cent margin of error was applied. A proportionate sampling method was later applied to produce the number of households to sample from each parish. Households in the survey were selected randomly from each selected village within each parish. In Kabaale and Nyakabingo parish, 80 per cent and 20 per cent of the households, respectively, were to be selected. The proportionate sampling method was applied because of the difference in the number of households in each of the parishes as informed by population statistics (UBOS 2014). During data collection, only 231 heads of households were willing to participate in the household survey.

Interviews and Location of Data Collection

The qualitative methods employed for data collection were key informant interviews and Focus Group Discussions (FGDs), all using semi-structured

Table 1

Description of Focus Groups and Key Informants

Focus groups and key informants	Women	Men	Total
Cash-compensated men (FGD 1)		5	5
Cash-compensated women (FGD 2)	4		4
Non-cash-compensated men (FGD 3)		5	5
Non-cash-compensated women (FGD 4)	5		5
Elderly group—cash- and non-cash-compensated (FGD 5)	4	3	7
Local government leader—Buseruka S/C (KI 1)		1	1
District local government leader (KI 2)		1	1
Local government leader—Buseruka S/C (KI 3)	1		1
Local council leader—Buseruka S/C (KI 4)		1	1
Local council leader—Buseruka S/C (KI 5)		1	1
Local government leader—Buseruka S/C (KI 6)	1		1
An officer from one of the non-governmental organizations (KI 7)		1	1
Total	15	18	33

interview guides. The key informants and FGD participants were purposively selected through help from the local leader who was familiar with the study area. FGDs and key informant participants for this study numbered 33: 14 women and 19 men. Five FGDs (Table 1) were held with participants from the age of 18 and above including women and men separately from the displaced households (see Table 1). FGDs concentrated on issues such as displacement-related consequences, social networks and relationships, cash compensation and resettlement, and experiences on gender relations. The discussions were facilitated in Kiswahili and Alur, which are the most commonly used languages in the area, and each lasted about one hour. The research assistant took notes and tape-recorded the discussions with the participants' consent and approval. The household survey and interviews for this research article were conducted between June and July 2017. In January 2018, key informant interviews and FGD were carried out, to get deeper insights on specific issues.

Data Analysis

Descriptive statistics based on frequencies and percentages were applied to show the response in terms of experiences with the consequences of displacement and resettlement on assets. Logistic-regression analysis was applied to show the relationship between the response on occurrence of specific consequences of resettlement that households had been exposed to and the socio-economic and demographic characteristics of the respondents. Logistic

Table 2

Consequences of Displacement and Resettlement on Household Assets and Outcomes in Buseruka Sub-county, Uganda, 2017

Consequences	Percentage of respondents	
	Yes	No
Land	81	19
Housing	36	64
Social networks	62	38
Household income	78	22
Employment	58	42
Food	64	36
Health	40	60
Water	36	64
Sum average consequences for all	57	43

Sample size (n) = 231.

regression was performed because the responses variables were either yes or no. Recorded qualitative data from FGDs and key informant interviews was transcribed and contents analysed to generate themes and narratives that could be used to explain the consequences of displacement and resettlement of households. The qualitative data was also used to validate and complement the quantitative data.

Results

Consequences of Displacement and Resettlement Processes on Household Assets and Outcomes

The household survey revealed that displacement and resettlement due to land acquisition for the oil-refinery-construction site exposed households to different risks, hence affecting most of the livelihood assets and outcomes as identified by Cernea (1997) as shown in Table 2.

Households reported that the displacement had exposed many of them to lose access to important basic resources and assets such as land, housing and jobs. The loss of land and jobs in turn affected household income, hence affecting household savings and food. Households also experienced loss of social networks, increased incidences of poor health (40 per cent) and inadequate access to safe water (36 per cent). Furthermore, the results reveal that loss of land was the most mentioned consequence of displacement, while loss of water resources was the least mentioned. There were, however, also positive factors involved in the resettlement processes, especially due to the land acquisition for the planned oil refinery that partly led to reduced risks. These

positive factors included; getting access to land with titles, petty businesses and well-built permanent houses for some of the affected households. Benefits such as the extension of electricity lines, roads, health centres and schools were realized for all communities within the oil-refinery-development project areas.

The FGDs and key informant interviews provided details on how the households in this area had been affected by the displacement and resettlement processes and this is henceforth provided the following.

Land

In all five FGDs, households reported losing part of their land as well as access to common community land and other resources such as forests, open grazing land and water due to the land acquisition. There is no more communally accessed land, in contrast to what it was like before the displacement. Land for cultivation and for grazing is increasingly scarce and costly.

Land and Cash Compensation

In an interview with one of the technical persons (KI 3), cash compensation for cultivated land and other resources attached to the expropriated land was seen as unfair and the resettlement process was slow. This resettlement process led to a reduction in the land sizes owned or controlled by people and the land-tenure system also underwent changes in the area. KI 4 explained that most of the communally owned land was now privately owned and under the control of wealthy individuals. These were also able to persuade local leaders to sell off communal land and even public land was transferred to private ownership. It thus seems as if wealthy people use the situation or occasion to enrich themselves by interfering in the local land-markets dynamics. A local leader (KI 4) further reported that there were also imposed restrictions on access to communal land and resources, especially within the planned oil-refinery site instigated by the government. In all FGDs, participants bitterly complained about the loss of land and the unfair land compensation. An old man aged 71 years who had received cash compensation said: 'I had 9 acres of land but was compensated for only 6 acres, I had to just open up a case in court and up to now the case is still in court.'

KI 7, a field officer from Bunyoro Albertine Petroleum Network organization, and KI 3 in Buseruka sub-county reported that the compensation was perceived as unfair to women. In the first phase of the compensation, only male heads of households were compensated because the responsible authorities including those from Ministry of Lands, Housing and Urban Development traditionally held the perception that the man formally owns and controls the land. The complaint made by women did bring about changes on who was to receive the compensation packages, whether in terms of land or cash. The husband and wife would both be considered in the next phases of compensation, since the payments were to be made in

instalments. As for those households who opted for land and/or house benefits, the land title would bear both the husband's and the wife's names. This helped women to be recognized and receive compensation packages during the next phases of the compensation processes. Households that were relocated also reported that they were happy that the land for compensation now would be privately titled land. Previously, such land for compensation would often be communally and customarily owned, yielding less security and weaker rights for the holder.

All the seven key informants reported observing substantial numbers of family break-downs among households receiving cash compensation for land or other lost assets. During the first phase of cash compensation, in households where the man (the household head) received the cash compensation, some decided to abandon their wives with all the children and married or went together with other women. Others who did not abandon their families used the money recklessly. Some reported examples included buying beer and having an extensive social life, using packaged mineral water for cooking and bathing purposes. There were also reports of even using beer to wash their feet and the skin of goats and cows. Households that did not use the cash compensation in a sensible way thus became poorer than before the displacement and ended up miserable. This also left many women and children in vulnerable situations. Women thus had to take up roles and responsibilities that they did not have before the displacement. They experienced a lack of proper housing and suffered from food and cash insecurity and even hunger in the relocation areas.

Household Income

FGDs indicated that the displacement led to a reduction in household incomes. Less land implied less agricultural production (both for crops and livestock-rearing) and incomes. A woman aged 34 years in a FGD of financially compensated people reported that other income-generating activities such as selling and hiring labour became constrained, as most of the employers relocated. Businesses are social institutions that need to be cared for and they were strongly affected by the relocation of both customers who lived nearby and also reduced numbers of suppliers in the value chain (an elderly man who received cash compensation). According to KI 3, the oil-refinery-development project further contributed to an influx of foreigners, some of whom were employed in the oil infrastructural development activities such as road construction, rehabilitation of health centres and schools, etc. This influx of foreigners led in many cases to a substantial increase in prices for most commodities and food due to increased demand. The respondents reported that about 75 per cent of household income was spent on food compared to 10 per cent before the displacement. KI 4 in Buseruka sub-county stated that the increases in commodities and food prices affected household expenditures and was only possible to keep about 20 per cent as savings.

However, the influx of foreigners led to increased income for business owners within the resettlement areas because the rise in prices also meant an increase in the profit margin for the sellers.

A woman in an FGD reported that, since their land sizes were reduced, most women lost the income they used to earn from sales of particular crops. She stated that they used to own land where they grew vegetables such as egg plants, green vegetables (Amaranthus) and cabbage, but now the only land available was owned by men. However, some of the households (10 per cent) that received cash compensation reported an increase in their income as well as savings in the form of livestock. One of the men during an FGD with the elderly group stated that

> the cash from compensation was very helpful though it was unfair. I and my wife agreed to buy some goats and pigs as savings for future purposes and also opened up a small business of supplying posho within the relocation villages.

Food

According to key informants and FGDs, the loss of arable land exposed households to increased food-insecurity risks. Three of the participants in an FGD with the elderly reported that, before the displacement, much of the foods were obtained from the farm and charity organizations. Food was also obtained through social networks of friends and relatives or from the market—at affordable prices. Reasons given for the reduced food access included a reduction in land size and in the ability to produce one's own food. Other reasons were a lower quality of land and, on the demand side, more food had to be purchased in a market where prices had increased substantially, as some 50 per cent of new groups of consumers that had a higher ability to pay had entered into the area.

FGDs and key informants stressed that a lack of adequate food was a major problem for displaced households, and especially households choosing resettlement packages. During prospecting of the land reserved for the oil refinery, access to common land previously used for cultivating, grazing and other forms of resource extraction for communities was permanently restricted. Households that chose resettlement were still waiting to be relocated from the oil-refinery-reserve areas. While waiting, they were allowed some cultivation, but with restrictions that perennial crops such as coffee and cassava should not be cultivated. But, in general, as most of the households had less access to land and faced rising food prices, the consequences for especially vulnerable groups with little land was grave. The loss of access and ownership of land deprived many women of food and incomes earned previously.

However, in FGDs with non-cash-compensated men (groups waiting to be resettled), a 27-year-old man stated that men and women suffered, as both were earning cash and subsistence incomes through farming activities.

Another KI 4 reported that the reduction in access to sources of food made women fear bearing more children. The women felt that their husbands could abandon them in the given situation, leaving them with sole responsibilities for raising the children and securing food and incomes. A woman aged 40 among the group to be resettled said:

> I have so many children and yet food is so expensive, now what will I do? Will the government give us some food? We used to have too much food, but now I am worried. Surely this Museveni government should be cursed.

Social Networks and Relationships

Social networks have been viewed as vertical and horizontal relationships and links that exist between people living within the area and among different other entities such as government bodies and organizations, non-governmental organizations and community groups (Woolcock and Narayan 2000). KI 2 and 4 in one of the resettlement villages reported that the displacement led in many cases to disintegration of social networks and groups, as people had to move out of the villages. This caused the splitting-up of local communities and hamlets, and affecting their engagement in these networks and institutions. Friends, relatives, neighbours and social groups became disintegrated and dispersed—reported by as many as 80 per cent of the participants in the FGD. KI 2 explained that also functional local groups and organizations suffered from this displacement and resettlement. Income-generating and money-saving groups based on local, social networks had been formed over time in the old setting; all fell apart as people relocated often far away from their original locations. After the displacement, there were no income-generating groups being formed among the local people.

Key informants revealed that, before the displacement and resettlement, individuals, especially children and women, had closer and frequent contact with their friends, relatives and peers. In the relocation areas of cash-compensated households, the host community did not want to mix with them, often mentioning statements such as 'those are rich people who belong to the government'. One of the women interviewed said: 'we had strong ties with our friends and relatives which is not the case now. They live so far in that we cannot pay them visits like we used to do.'

According to FGD interviews, some 60 per cent of the participants reported that the trust amongst households within the community had become much affected. Before the resettlement, neighbours and relatives used to trust each other.

The displacement was reported to affect the unity amongst individuals and households. One of the men aged 37 who received cash compensation remembered: 'sometimes we even gathered and shared meals with the neighbours but in the relocation areas, no one is bothered about another.' In the relocation areas, everyone was out for himself, leaving those considered vulnerable

such as the sick, old and young greatly affected in terms of social support. In the case of women, it was culturally more difficult to get support or to borrow from strangers.

Employment

In an FGD with non-cash-compensated households, it was reported that the employment and off-farm income opportunity of the household head was heavily affected. An elderly man (71 years) explained that farming was his main activity and he always earned over US$277 annually after selling the harvested products. After the displacement, part of his land was taken and it was very difficult to acquire new land. According to KI 4, with the influx of foreigners in Buseruka, land prices had increased substantially, making it very difficult to acquire new land. The elderly man further stated that even his small-business operations had been affected, since most of his old customers had relocated to other areas.

A woman aged 49 commented that hiring her labour on farmlands would give her some cash incomes. She stated: 'when I dig in people's gardens, at least I get some money and buy food for my children.' The displacement affected women who had been employed as causal labourers. This was because households that needed the casual labourers had relocated, altering labour-market opportunities. There seemed to be fewer employment opportunities within the new resettlement areas. There are (still) fewer business activities, fewer values produced in agriculture due to the limited land and fewer people employed as farm labourers in the new resettlement areas (First Author's statement).

KI 3 and 4 explained that women, young girls and elders were more affected than the men because men, including youth and boys, could do various jobs such as carrying heavy luggage and joining the motorbike transport businesses ('boda boda'). Some of the men had adequate education to enable them to acquire formal jobs where they earned monthly salaries.

Health Facilities

According to the FGD with families that were non-cash-compensated, they had been told to destroy their existing sanitation facilities in preparation to relocate to the 'formal resettlement village called Kyakaboga'. However, the government was not ready to let them shift immediately. The new houses and necessary facilities, such as water, electricity and access roads, at the 'formal resettlement village' were still under construction. KI 4 pointed out that the displacement also pre-disposed the displaced people to unsafe water—a hazard to the health of people. The poor sanitation and hygiene aggravated by a lack of sanitation facilities and unsafe water contributed to the occurrence of diseases such as typhoid fever and diarrhoea, which is common among the small children. In an FGD with a group of elderly men and women, they reported that they had become more negatively affected in

terms of access to health facilities. The nearest health centre was now about three kilometres away from their new home.

However, about 20 per cent of those who relocated to nearby villages reported that the resettlement had improved their access to health facilities and also that the nearby health centre IV in Buseruka sub-county had been renovated and services improved as compared to before the displacement.

Type and Condition of House

Technical personnel in Buseruka sub-county, KI 1 and KI 4 revealed that some households that had neither relocated nor spent the compensation funds responsibly reported a decline in the type and conditions of their housing. Such households would typically either rent a house or build a house with non-fired bricks, walls and floors plastered with mud. The roofs are typically grass thatched and, in some instances, leaking during heavy rains. However, KI 7 from Bunyoro Albertine Petroleum Network Organisation explained that people who received cash compensation and spent money on improving their houses and some who were relocated benefited from permanent houses with water and electricity. KI 1 stated that the changes improved the living conditions and health of displaced households. Households that opted for non-cash compensation revealed that, much as they have benefited by securing permanent houses with a titled land, they feel that their health, privacy and security would deteriorate over time. A man among those to be resettled said that the spacing between the houses is so close that, in the case of any disease outbreaks such as cholera or measles, many will be at risk. Such a situation would be worse for women, young girls and children under five years old who would spend most of their time at home. A non-cash-compensated woman complained bitterly, saying:

> how could they build those houses looking like a military barracks and that are so closely spaced, more conflicts will break out amongst neighbours. Children can be playing and he or she ends up pouring soil or rubbish in a neighbour's food.

Water

Key informants interviewed indicated that the displacement exposed households to loss of access to safe water sources and emphasized that access to safe water was amongst the major problems they faced. KI 4 explained that the boreholes previously constructed within the land ear-marked for the planned construction of the oil refinery were abandoned after the households had relocated. The boreholes were covered by bushes, making it difficult to access them. Pipes leading water to the boreholes were destroyed by the many vehicles and trucks operating in oil and gas activities. The open-shallow waters in the form of streams and wetlands became contaminated by run-off and grazing animals. Interviews and FGDs revealed that, after the

boreholes within the planned oil-refinery site broke down, the government and non-governmental organizations did not make any effort to repair them, leaving the local people without safe water.

FGD and key informant interviews revealed that the quality of water used had been compromised due to the displacement. There was no access to clean water that could be used for drinking and even cooking. The nearest safe water accessed for cooking and drinking was more than five kilometres away. A woman aged 38 in Kitegwa village elaborated: 'the water we use is from the nearby stream or sometimes river Wambabya, even animals move and drink from the same water sources.'

KI 4, living close to one of the affected villages, explained that access to clean water was one of the major problems in the oil-refinery areas. Families with both boys and girls have now decided that young boys should go to the distant water sources and fetch water for drinking and cooking purposes. The young girls could fetch water from the nearby streams for washing utensils, clothes and bathing. There were also respondents (10 per cent) who reported that the displacement had led to the construction of a borehole in Kabaale trading centre where they had relocated. A man explained:

> much as they have constructed a borehole within, it is usually so congested in that when you go to fetch water, most likely you may spend at least an hour.

A logistic-regression analysis was performed to determine the relationship between responses on the experience of the risk factors and the various socio-demographic characteristics of respondents. A list of eight dependent variables (risk factors) against eight independent variables (household characteristics, including gender, age, household size, ethnicity, monthly income, land size, education and occupation) were considered during the analysis and the results are shown in Table 3.

The results from the logistic-regression analysis indicated that there was evidence of a relationship between responses on the experience of risk factors and various socio-demographic and economic characteristics of households. All the eight (risk factors) dependent variables considered, namely land ownership, participation in social networks and groups, household income, employment, type and condition of housing, access to sources of food, health facilities and access to water resources, showed evidence of a relationship with at least one of the socio-demographic and economic characteristics of households.

The probability that a respondent mentioned loss of land ownership increased with age and income. Households that were between 31 and 50 years old were more likely to mention loss of land ownership compared to the younger and older age groups. Households earning between 51,000 and 300,000 UGX were more likely to mention loss of land ownership compared to those with high incomes. There was no significant relationship with other socio-demographic and economic characteristics.

Table 3

Relationship between Consequences of Resettlement and Socio-demographic and Economic Characteristics of Respondents

Consequences	Socio-demographic and economic characteristics	Estimated co-efficient	*P*-values
Land			
	Age (Reference category-20-30)		0.033
	31–40	1.975	0.044
	41–50	2.167	0.018
	Monthly income (RC< or=50, 000)		0.188
	51,000–100,000	1.490	0.033
	110,000–300,000	1.663	0.049
	Land size (RC<half an acre)		0.478
	1.5–2 acres	2.577	00050
Social networks			
	Ethnicity (Banyoro)		0.022
	Others	–1.628	0.034
Household income			
	Age (RC-20-30)		0.034
	60+	–0.817	0.040
	Ethnicity (RC-Banyoro)		0.157
	Alur	0.623	0.039
Employment status of household head			
	Age (RC-20-30)		0.114
	51–60	–1.780	0.007
	60+	–0.700	0.354
	Household size (RC-1-3)		0.043
	10 and above	1.701	0.012
	Land size (RC-<half an acre)		0.004
	Over 5 acres	–2.294	0.009
Type and condition of house			
	Monthly income (RC-< or=50, 000)		0.429
	310,000–500,000	–1.681	0.046
Food			
	Gender (Female)	–1.165	0.009
	41–50	–1.613	0.015
	60+	–2.184	0.007
	Ethnicity (RC-Banyoro)		0.029
	Bagungu	1.462	0.094
	Others	–1.731	0.045
	Land size (RC-<half an acre)		0.149
	Half an acre	–2.065	0.041
	1.5–2 acres	–2.543	0.013
	2.1–4 acres	–2.506	0.013

	4.1–5 acres	–2.762	0.006
	Over 5 acres	–2.506	0.014
Health facilities			
	Age (RC-20-30)		0.040
	60+	–2.007	0.030
	Household size (RC-1-3 persons)		0.012
	4–6 persons	–1.438	0.013
	7–10 persons	–1.862	0.003
Water availability and access			
	Age (RC-20-30)		0.111
	60+	–1.636	0.036

Household survey June–July 2017 ($n = 231$).

The probability that a person would mention participation in social networks and groups as being affected decreased among ethnic groups other than Banyoro, who are the natives. Other ethnic groups that are not native were less likely to mention that their participation in social networks and groups was affected. There was no significant relationship with other characteristics of the respondents.

The probability that a respondent mentioned that household income was affected was significantly related to age and ethnicity. Respondents above 60 years old were less likely to mention that their household income had been affected compared to the young ones. The Alur were more likely to mention that their household income had been affected compared to other ethnic groups.

The probability that a respondent mentioned the employment status of the household head as being affected was significantly related to age, household size and land size. The probability that a respondent mentioned that the employment status of the household head was affected reduced with age. Older people were less likely to respond in the affirmative compared to young ones. The probability that a respondent mentioned that the employment status of the household head was affected increased with the household size. Households with large numbers of people (more than 10) were more likely to respond in the affirmative compared to those with small households. The probability that a respondent mentioned that the employment status of the household head was affected decreased with the size of land that the household owned. Households with over five acres were less likely to respond in the affirmative compared to those with small land holdings.

The probability that a respondent mentioned the type and condition of the house was significantly related to the income of the respondent. The probability that a respondent mentioned that the condition of their house was affected decreased with income. High-income earners were less likely to mention that the type and condition of their house had been affected compared to low-income earners.

The probability that a respondent mentioned access to sources of food as a risk factor decreased with sex, age, land size and ethnicity. Women were less likely to mention food as a risk factor compared to men. The older respondents were less likely to mention food as a risk factor compared to young respondents. The respondents under the others category of ethnic groups were less likely to mention food as a risk factor compared to Banyoro, Bagungu, Alur and Lugbara. Similarly, the respondents with relatively large land holdings were less likely to mention food as a risk factor compared to those with small land holdings.

The probability that a respondent mentioned access to health facilities was significantly related to age and household size. Older respondents were less likely to mention that health facilities had been affected compared to young ones. Households with a large number of people were also less likely to mention that health facilities had been affected compared to those with few members in the household.

The probability that a respondent mentioned water availability and access was significantly related to age. The older the respondents, the less likely they were to mention that water availability and access had been affected.

Discussion

Consequences of Displacement and Resettlement on Household Assets and Outcomes

The results indicate that individuals and households in Buseruka sub-county, Hoima district experienced undesirable consequences of the displacement and resettlement on asset access and outcomes in different ways, as suggested by Cernea and Mcdowell (2000). The IRR model applied in mapping out the economic, social and cultural impoverishments justifies the fact that displaced people commonly lose human, social, physical, financial and natural capital. In this study, similar to findings by Chu *et al.* (2015) and Ahsan (2016), a reduction in land sizes or loss of land as one of the vital and productive assets meant more suffering for displaced households, as they had to find other economic activities and means of securing food and income in order to earn a living and rebuild their livelihoods in relocation areas. The majority (80 per cent) of displaced households in rural communities are employed in agriculture either as small or marginal farmers and some people may be landless but employed as causal agricultural labourers (Mariotti 2015). In his study, Wilmsen (2011) found that women became more vulnerable to loss of land, since it is one of the major livelihood assets that, when available and used, contributes to income generation and economic security. The level of response on the experience of the consequences of the displacement and resettlement varied between households, with the negative effect on land access constituting the major response and access to safe water emerging as the least pressing factor. Displaced households that had owned larger tracts

of land had their land sizes reduced compared to what they owned before the displacement. The reduction in land sizes greatly affected access to livelihood outcomes such as food and cash incomes (Quetulio-Navarra *et al.* 2014; Ambaye and Abeliene 2015).

Respondents reported living in the new place of residence for over 10 years, implying that the period lived in the parish before relocation to the new residences was also considered. Respondents felt that having relocated to nearby villages and within the same parish, it would be better not to consider themselves as new occupants, since they were already familiar with the place. The relocation process started after July 2013, when households that had opted for cash compensation were receiving their packages. After the evaluation exercise of land and properties within the oil-refinery boundary, displaced households, including those that opted for cash and non-cash compensation, decided to relocate to nearby villages. Some of the cash-compensated households relocated to nearby villages and others far away. However, the non-cash-compensated households relocated to nearby villages temporarily while waiting for the government to relocate them to the formal resettlement village, Kyakaboga. From the time at which the relocation process started in 2013 until 2018, the non-cash-compensated households remained waiting until January 2018, when the official relocation process to the formal resettlement village started. All these delays subjected non-cash-compensated households to uphold suffering ranging from inadequate food, poor health facilities such as latrines and poor accommodation, among others.

The Land Act 1995 on land transactions requires that any decisions made by the man over any land available should be done in consultation with the housewife. This law has not been followed as prescribed. In Uganda, just like in China (Wilmsen 2011), it is common practice that decisions regarding land are made by men even if it is against the law. Women have very limited involvement in matters regarding land transactions. Women are through informal institutions and practices denied or at least constrained in the right to own and control land. As land is the main means of production and livelihood, land access and land rights are obviously crucial (Land Act 1995). Ownership of land is commonly and by tradition left to the male child and the husband in most families and among most ethnic groups in Uganda. In her studies in Hoima District of Uganda, Kyomugasho (2016) observed that the formal institutions and laws over land rights in Uganda do not favour the local people's rights and interests. This is because, in Uganda, laws related to land rights are very weak and often coupled with rampant corruption, where the rich, powerful and even the government are favoured over local people. In most African countries such as Uganda, the existing social networks and relationships are more of compensation to the weak, which acts as security and offers socio-economic support in times of trouble. The loss of access to such social networks also meant a loss of access to incomes and loans that were previously more easily accessed. The vulnerable groups such as the

elderly, children and women groups felt more affected by losing such connections and ties that they had developed over generations. According to Cernea and Mcdowell (2000), the loss of social networks and reciprocity increases dependence, powerlessness and the level of vulnerability. In this case, resettlement also exposed households to the risk of increased diseases. That result was contrary to findings by Quetulio-Navarra *et al.* (2014) in the Philippines and Indonesia, where they found that resettlement did not increase disease outbreaks. This may have been because of the support in the form of basic services such as houses and health-care facilities immediately after families relocated.

Relationship between Consequences of Resettlement and Socio-demographic and Economic Characteristics of Respondents

Unlike the results by Quetulio-Navarra *et al.* (2014) on the impacts of resettlement in the Philippines, all those resettled, including the old, young and low-income earners, were not likely to complain about losing land. This is because, after relocation, each household was given land and a house. In this study, households, especially those with young and old people and low-income earners, felt that the loss of land coupled with the increase in land prices would greatly affect their livelihoods. Due to unfair compensation and increased land prices, securing land equal to or larger than they had previously owned became difficult. That current scenario characterized by the high odds of low-income earners and the youth indicating that they had lost land during the displacement implies that the resettlement left them worse off than they were in terms of access to land.

Households with mainly youth felt that the loss of income and employment would bring more suffering, as they had accumulated fewer productive assets and no alternative sources of income. The youth also felt that having no sanitation and hygiene facilities such as latrines, waste-disposal pits and clean water are health hazards for communicable diseases such as typhoid fever and cholera, as affirmed by Nikuze *et al.* (2019). A study by Quetulio-Navarra *et al.* (2014) also indicated that loss of employment was less likely to be mentioned by respondents with large pieces of land. This could be because, through cultivating their land, more food and income would be produced and earned, respectively. Besides the crops grown, the same piece of land could also be used for livestock-keeping and other activities such as brick-laying. In this study, similarly to those by Quetulio-Navarra *et al.* (2014), respondents earning a higher income were less likely to mention the effect of the displacement on housing as compared to the low-income earners. The low-income earners felt that having insufficient money would compel them to sell a portion of the land received as compensation or buy a smaller plot of land so as to have more money to complete a house they had opted to build in relocation areas. Although women were found to be less likely to mention that food was affected by displacement, other studies in the region

had contrary findings (International Alert 2013; Kyomugasho 2016) in their study in the Albertine region of Uganda. This may be attributed to the difference in the timing of the studies. The Alur ethnic groups were more likely to mention that their income had reduced than other groups. This is probably because of the reduction in the land sizes owned and the low fertility in the formal resettlement village, thus affecting their income, since they derived their income mostly from agriculture. About 60 per cent of the households comprising Alur owned larger sizes of land—at least five acres—before resettlement compared to what they had after relocation. In most developing countries, the more land a household has, the more positively affected a household will be in terms of household income (Carletto *et al*. 2007).

High-income earners were less likely to mention that housing had been affected by the displacement. This is because they were able to get better housing facilities compared to the poor, who had to rely on the compensation. Similarly, other ethnic groups apart from the Banyoro, Bagungu, Alur and Lugbara were less likely to mention that they had been affected in terms of food. This is probably because they lost land on which they grew their food.

The relationships between the socio-economic characteristics of households and the consequences of the displacement and resettlement also contribute to explaining the differences across households (Quetulio-Navarra *et al*. 2014) that hold very different portfolios of assets.

Conclusion

The displaced communities have been exposed to a number of negative consequences and most people stress that their livelihood situation had become less secure and more risk-prone for the future. Some households do, however, indicate that they had also benefited. The negative consequences involve reduced access and altered land ownership, social disintegration, loss of income, food insecurity, poor health conditions and loss of access to safe water. The consequences experienced could also be explained by the socio-economic and demographic characteristics of respondents where both male and female respondents with access to more and productive assets including larger land sizes, higher incomes and smaller household sizes reported being affected more by the displacement on their households. But also vulnerable groups such as females, the elderly and those with low or no education levels were more risk-prone than before the displacement. The study recommends that, in future development projects, the government should take into consideration the consequences of the displacement and resettlement on existing inequalities to ensure fair and sustainable resettlement. The compensation should be fair, prompt and gender-sensitive to reduce social vulnerability among affected households and groups considered vulnerable, such as women, the elderly and children.

Acknowledgements

This research article has been successfully prepared through support by the PELIBIGO project under the Energy and Petroleum Programme (EnPe) of NORAD. Special thanks go to all project members and individuals at the Norwegian University of Science and Technology, the Norwegian University of life Sciences and Makerere University, who offered support in terms of information, guidance and counselling. The leaders of Hoima district are also deeply appreciated for the permission, guidance and cooperation throughout the field study.

AHSAN, R. (2016) *Mega-infrastructure Development Induced Displacement in East Malaysia: A Study of Social Sustainability*. Malaysia Sustainable Cities Program, Working Paper Series.

AL RAWASHDEH, R., CAMPBELL, G. and TITI, A. (2016) 'The Socio-economic Impacts of Mining on Local Communities: The Case of Jordan'. *The Extractive Industries and Society* 3(2): 494–507.

AMBAYE, G. and ABELIENE, A. (2015) 'Development-induced Displacement and Its Impacts on the Livelihoods of Poor Urban Households in Bahir Dar, North Western Ethiopia'. *African Human Mobility Review* 1(3): 310–331.

ANDERSON, D. M. and BROWNE, A. J. (2011) 'The Politics of Oil in Eastern Africa'. *Journal of Eastern African Studies* 5(2): 369–410.

AZMI, F. (2014) 'Impacts of Internal Displacement on Women's Agency in two resettlement Contexts in Sri Lanka'. In Brun, C., Balikie, P. and Jones, M. (eds) *Alternative Development: Unravelling Marginalization, Voicing Change*. London and New York: Routledge Taylor Francis Group, pp. 243–257.

BENNETT, O. and MCDOWELL, C. (2012) *Displaced: The Human Cost of Development and Resettlement*. New York: Springer.

CARLETTO, G., COVARRUBIAS, K., DAVIS, B., KRAUSOVA, M., STAMOULIS, K. G., WINTERS, P. C. and ZEZZA, A. (2007) 'Rural Income Generating Activities in Developing Countries: Re-assessing the Evidence'. *eJADE: electronic Journal of Agricultural and Development Economics* 4(853-2016-56112): 146.

CERNEA, M. (1997) 'The Risks and Reconstruction Model for Resettling Displaced Populations'. *World Development* 25(10): 1569–1587.

CERNEA, M. M. and MCDOWELL, C. (eds) (2000) *Risks and Reconstruction: Experiences of Resettlers and Refugees*. Washington, DC: The World Bank.

CHU, J., YOUNG, K. and PHIRI, D. (2015) Large-scale Land Acquisitions, Displacement and Resettlement in Zambia, http://hdl.handle.net/10566/4296.

GAMU, J., LE BILLON, P. and SPIEGEL, S. (2015) 'Extractive Industries and Poverty: A Review of Recent Findings and Linkage Mechanisms'. *The Extractive Industries and Society* 2(1): 162–176.

HYNDMAN, J. (2000) *Managing Displacement: Refugees and the Politics of Humanitarianism*. Minneapolis: University of Minnesota Press, pp. 253.

INTERNATIONAL ALERT. (2013) *Governance and Livelihoods in Uganda's Oil-rich Albertine Graben*. Edited by Robert Senath Esuruku. International Alert-Uganda, Organization.

KYOMUGASHO, M. (2016) Oil Industry in Uganda: The Socio-economic Effects on the People of Kabaale Village, Hoima, and Bunyoro Region in Uganda. Dissertations - ALL. 613. http://surface.syr.edu/etd/613.

LANDS ACT (1995) Constitution of the Republic of Uganda. 1995, http://www.wipo.int/edocs/lexdocs/laws/en/ug/ug023en.pdf (accessed September 2017).

MARIOTTI, C. (2015) 'Resettlement and Risk of Adverse Incorporation: The Case of the Polavaram Dam'. *Development in Practice* 25(5): 628–642.

MATHUR, H. M. (2013) *Displacement and Resettlement in India: The Human Cost of Development*. London: Routledge.

MCDOWELL, C. (2002) 'Involuntary Resettlement, Impoverishment Risks, and Sustainable Livelihoods'. The Australasian Journal of Disaster and Trauma Studies. http://trauma.massey.ac.nz/issues/2002-2/mcdowell.htm

MINISTRY OF ENERGY AND MINERAL DEVELOPMENT (2012) *Resettlement Action Plan for the Proposed Acquisition of Land for the Oil Refinery in Kabaale Parish, Buseruka Sub-county, Hoima District*. Kampala, Uganda: Petroleum Exploration and Mineral Department, Strategic Friends International Limited.

NIKUZE, A., SLIUZAS, R., FLACKE, J. and VAN MAARSEVEEN, M. (2019) 'Livelihood Impacts of Displacement and Resettlement on Informal households: A Case Study from Kigali'. *Habitat International* 86: 38–47.

OLIVER-SMITH, A. (2009) *Nature, Society, and Population Displacement: Towards Understanding of Environmental Migration and Social Vulnerability*. Bonn, Germany: UNU-EHS.

PRENZEL, P. V. and VANCLAY, F. (2014) 'How Social Impact Assessment Can Contribute to Conflict Management'. *Environmental Impact Assessment Review* 45: 30–37.

QUETULIO-NAVARRA, M., NIEHOF, A., VAN DER HORST, H. and VAN DER VAART, W. (2014) 'Short-term Risk Experience of Involuntary Resettled Households in the Philippines and Indonesia'. *Habitat International* 41: 165–175.

SCUDDER, T. (1999) *Dam-induced Community Resettlement: Principles and issues*. Memorandum prepared for the World Commission on Dams, Cape Town.

TEJADA, J. J. and PUNZALAN, J. R. B. (2012) 'On the Misuse of Slovin's Formula'. *The Philippine Statistician* 61(1): 129–136.

TERMINSKI, B. (2011) *Oil-induced Displacement and Resettlement: Social Problem and Human Rights Issue*. Research Paper. Vancouver: Simon Fraser University.

TERMINSKI, B. (2012) Mining-induced Displacement and Resettlement: Social Problem and Human Rights Issue (a Global Perspective). http://nbn-resolving.de/urn:nbn:de:0168-ssoar-327774 (accessed July 2013).

TERMINSKI, B. (2013) 'Development-induced Displacement and Resettlement: Theoretical Frameworks and Current Challenges'. *Development*, 10: 101.

TERMINSKI, B. (2015) *Development-induced Displacement and Resettlement: Causes, Consequences, and Socio-legal Context*. Stuttgart: Columbia University Press.

TIMMONS, J. R. (2013) *Trouble in Paradise: Globalization and Environmental Crises in Latin America*. New York: Routledge.

TURNER, B. L., KASPERSON, R. E., MATSON, P. A., MCCARTHY, J. J., CORELL, R. W., CHRISTENSEN, L. *et al.* (2003) 'A Framework for Vulnerability Analysis in Sustainability Science'. *Proceedings of the National Academy of Sciences* 100(14): 8074–8079.

WATTS, M. (2004) 'Resource Curse? Governmentality, Oil and Power in the Niger Delta'. *Geopolitics* 9(1): 50–80.

WILMSEN, B. (2011) 'Progress, Problems, and Prospects of Dam-induced Displacement and Resettlement in China'. *China Information* 25(2): 139–164.

WOOLCOCK, M. and NARAYAN, D. (2000) 'Social Capital: Implications for Development Theory, Research, and Policy'. *The World Bank Research Observer* 15(2): 225–249.