

Vulnerability of agro-pastoral community resulting from oil exploration activities at Lokichar-Kochodin basin in Turkana County

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Abstract

Take-over of land from the pastoral communities in Turkana County for oil exploration and development has primarily affected the livelihoods of communities living in the region due to exposure to hazardous risks. This study has highlighted research that was conducted to determine the nature of vulnerability of households residing in the Lokichar-Kochodin basin, an oil mining plant. Employing a cross-sectional survey research design, the author collects both qualitative and quantitative data using questionnaires, focus group discussion (FGD) guides, and key informant interview (KII) guides for which analysis was performed using (SPSS) Version 21 and Nvivo, respectively. The study finds that oil-related activities cost native individuals and their households their land, health, and general livelihoods, increasing their vulnerability to life loss. Reduced livelihood opportunities, droughts and disease burden, the exposure of socio-economic endowment, and risk/erosion of household occupations are among other aspects identified in this study. Therefore, the study recommends the resettlement of the displaced households in line with plans that comply with international directives and laws to ensure a sustainable future for the pastoral communities.

Key terms: Vulnerability, natural resources, oil exploration, Agro-pastoral community.

INTRODUCTION

Vulnerability comprises the irrepressible external factors that affect people's livelihood opportunities and assets (Adeola, 2020). According to Vanclay (2017), the displacement and resettlement processes ensuing from development projects have steadfastly remained one of the most contentious subjects in development in the current times. Existing statistics reveal that approximately 15 million individuals are forced annually to leave their homelands to pave the way for large-scale development projects (Aboda et al., 2021). Overall, development-induced displacement poses lopsided risks to natural and human systems due to variations in exposure and vulnerability.

Studies assessing people's livelihoods emphasize the practicalities of the lives of members of vulnerable and marginalized groups to determine how these cohorts generate their living within contexts of risks and impoverishment (Dijk, 2011). Livelihood is defined as the resources, capabilities, and activities that are required for ways of living (Steinbrink & Niedenführ, 2020). This definition is critiqued because of its people-centeredness, which results in attention on the household as the sole unit of analysis, yet household livelihood strategies, outcomes, and vulnerabilities are found in available livelihood assets (physical, natural, human, financial, and social) and are influenced by existing institutions, processes, and structures (Dijk, 2011; Sakdapolrak, 2014).

There is no particular study that has examined the nature of vulnerability of households displaced by oil mining activities in the context of Turkana County. Generally, the relationship between displacement and its social implication or effects, as well as the relationship between agency (displaced households) and structure (structural factors), must continually be considered an empirical interrogation to be studied by including a reference point of the role that livelihoods play in the social organization and strategies of households before the displacement, and how these livelihoods have been disrupted after displacement. It is from this scenery that this study sought to examine the nature of vulnerability of the Agro-Pastoral Community that ensued from the discovery and exploration of oil in Lokichar-Kochodin Basin in Turkana County.

LITERATURE REVIEW

Over the past decades, research interests in the association between the development and exploitation of natural resources and the livelihoods of indigenous communities have been growing in the African region. Livelihoods in this context denote the activities, assets, and capabilities that people require for a means of living (Wegenast & Beck, 2020). According to Ayifli et al. (2014), the development and exploration of natural resources in the African continent have been primarily motivated by two key factors. First, Africa is endowed with valuable non-renewable and renewable resources, as well as a vast of productive land. Secondly, the majority of the low-income households in rural areas rely largely on the environment and natural resources to sustain their livelihoods and survival. Consequently, the deterioration of the natural resources and the ecosystem has implications for the economic, cultural, and social livelihoods of many rural populaces (Owen & Kemp, 2015). Many studies have been carried out in different parts of Africa to examine the nature of the vulnerability of households in oil-mining areas.

As noted by Ogwang and Vanclay (2019) in their study examining the vulnerability of livelihoods of local populaces displaced by oil and gas development projects, oil development projects led to the physical displacement of many households, with individuals losing their structures, dwelling units, and residential land, and many others being economically exiled, with their basic agricultural production, natural resource gathering, livestock rearing, and overall livelihoods significantly reduced. According to the two, the project-affected households found it difficult to access land for grazing and agriculture, thus exposing them to greater vulnerability to food insecurity and loss of household income. Furthermore, their results show that the households' access to the lake was restricted due to oil exploration activities, yet Lake Albert was very fundamental to the livelihoods of the communities in the area, particularly for water transport, fishing, and watering livestock, among others (Ogwang & Vanclay, 2019). This generally restricted the access to livelihoods of indigenous inhabitants as well as dwindling vital resources, livelihood opportunities, and occupations.

Ogwang and Vanclay (2019) further point out that the displaced households faced a significant reduction in accessible land for grazing as most of their land was taken up for the construction of oil-related infrastructure. Although most of the displaced persons were compensated, the authors argue that it was difficult for the households to get adequate inexpensive alternatives for feeding their livestock. Consequently, there was notable disruption of livelihood-associated activities, and even suspension of some opportunities, with related increased levels of poverty among displaced households. Generally, the study emphasizes the vulnerability of the livelihoods of the displaced communities due to the acquisition of land for oil projects, which is fundamental for their livelihoods.

In a similar study conducted in Ghana, Mandishekwa and Mutenheri (2020) examined the impact of mining-induced displacement on livelihoods. The authors argue that household livelihoods pivot on land, and therefore, land expropriation leads to the decapitalization of the displaced populations. According to them, through land loss, individuals lose their livelihood capital, including man-made and natural capital. This study's findings showed that land was an integral asset for households, and its loss was damaging to the households' livelihoods. This is mainly because most rural communities are peasants, and therefore losing their land increased their vulnerability to loss of household income and risk of food insecurity (Mandishekwa & Mutenheri, 2020). Therefore, this finding implies that semi-subsistent households that earn their income from land-related economic activities lose it after displacement. The loss of social capital as an important livelihood capital was also evidenced in this study. The researchers assert that the displacement of households resulted in the loss of social capital, worsening the livelihoods of the affected populations. Furthermore, it is argued that the loss of social capital led to the loss of reciprocity within the community and marginalization (Mandishekwa & Mutenheri, 2020). From this study, therefore, there is no doubt that there is a link between displacement consequences and vulnerability of livelihoods among the displaced populations.

Aboda (2018) conducted a qualitative study to examine the livelihoods of people who were displaced and resettled due to an oil refinery in Uganda and reported that in the Albertine region of Uganda, the displacement of households has led to the loss of livelihood resources and assets. Yet, the infrastructural and exploratory activities are in their early stages. This study shows that the establishment of the oil refinery resulted in the loss of livelihood opportunities and socio-economic endowment by the households, as evidenced by an array of challenges such as reduced access to key infrastructural facilities, including schools, roads, health centers, and markets among others (Aboda, 2018). Furthermore, the author highlights that displaced households faced a reduction of their livelihoods through reduced access to water, land for agriculture and livestock keeping, and fuel wood, thus making it hard for them to rebuild their livelihoods in resettlement areas. Additionally, the displaced communities in the study reported reduced access to food and water, thus suffering food crises and disease threats caused by contaminated water sources. The findings from this study indicate that the reduced livelihoods of the displaced households and communities affected their adaptation and coping strategies. Building on this literature, the current study examined the nature of vulnerability in the oil-induced displacement phenomenon in Lokichar-Kochodin Basin in Turkana County.

In examining environmental prominence and women's livelihoods in Albertine, Uganda, Twinamasiko et al. (2021) find that displacement and resettlement of households due to oil activities led to the loss of women's previous livelihoods. According to them, most women in Uganda rely on land as the main source of their livelihood, with most of them participating in crop production and interrelated economic activities for household livelihoods. In the Albertine region, the land was needed for establishing oil wells, airports, oil refinery plants, oil transportation infrastructure, and other subsidiary infrastructure to facilitate oil extraction activities (Twinamasiko et al., 2021). This implied that the consequent disruption, dislocation, and resettlement became inevitable outcomes for households in the region. Based on their findings, it was discovered that livelihood effects that resulted from the displacement and relocation led to

the loss of their land and rendered most households in the area poor, especially those who relied on land as household income and food sources. The results from their study, therefore, indicate that the living conditions and livelihoods of the households were highly fragmented, with most women being detached from their husbands and families (Twinamasiko et al., 2021).

Oil-related activities have cost millions of individuals in Africa their land, residential lands, health, lives, and livelihoods. From the previous studies, it has been widely acknowledged that the shock brought by the loss of crops, livestock, and lands, as well as delayed compensation, has increased the vulnerability of households' livelihoods due to oil exploration. Generally, natural capital has been pointed out as an integral component of the derivation of livelihoods, particularly from resource-based undertakings such as livestock rearing, farming, gathering, fishing, and mineral extraction, among others.

Nevertheless, regardless of the vast literature on displacement and livelihood vulnerability and little has been done on the vulnerability of households displaced by oil mining activities in the context of Turkana County's Lokichar-Kochodin Basin. This paper thus examines the nature of the interruption of livelihoods caused by the direct and indirect displacement of households in Lokichar-Kochodin Basin in Turkana County, Kenya, and how it has led to the impoverishment of the livelihoods. The overall assumption in this study is that oil developments in Turkana County could lead to the degradation of the

ecosystem and thus increase the risk to the livelihoods of households in the area.

FINDINGS AND DISCUSSION

The overall hypothesis (prediction) was that households had experienced vulnerability (risk) or reduction (deficiency) of livelihoods and well-being arising activities like during exploration; approximately more than ten acres of land is fenced for each well. To address this objective, it was necessary to identify fundamental indicators of livelihoods and their level of vulnerability. Accordingly, the study assessed the nature of livelihood risks and vulnerabilities and experienced reduction and/or deficiency of the livelihoods. Key indicators included 1) the rating of risk (vulnerability), reduction or deficiency of the overall access to livelihoods; 2) access to food; 3) food intake practices; 4) increase of disease burden; 5) seasonal household earning; 6) socio-economic endowment; and 7) vulnerability of the household occupations. The study assessed the experience of vulnerability (risk) or reduction in each indicator on a scale of 1 to 4 over the last seven (7) years. The seven years were intended to cover a sustained period of the cycles of droughts, exploration, and oil extraction.

Reduced Livelihood Opportunities

The study hypothesized that households would have experienced increased vulnerability concerning livelihood opportunities or reduced livelihood opportunities. To this end, the possible reduction of livelihood opportunities and the results were assessed and summarised in Table 1 below.

Table 1. Experience of Reduced Livelihood Opportunities

		Frequency	Per cent
1	Limited risk	97	23
2	Minimal reduction of livelihood opportunities	83	20
3	Extensive reduction (By more than half of the usual livelihood opportunities)	113	27
4	Severe reduction of livelihood opportunities (Experienced abject poverty, hunger and starvation)	130	31
	Subtotal	423	100
	Missing	3	
	Total	426	

Key: 1= limited risk; 2= Minimal reduction, 3= Extensive reduction, and 4= severe reduction of livelihood opportunities

Quite a number (31%) of the households reported a severe reduction of livelihood opportunities, with another 27% reporting an extensive reduction of their livelihoods. Principally, 48% of the households reported severe levels of reduced livelihood opportunities, whereas 43% indicated minimal to limited loss of livelihood opportunities. This finding reveals a reduction in livelihood opportunities, which then increases the impoverishment of a population that is already vulnerable and excluded. It was also established that the risk of reduced livelihood opportunities had been a common experience, particularly among the rural households in the mining regions of Turkana County. An individual in one of the FGDs with women cluster elders reported that,

We sell firewood to educate our children because there is nothing else to depend on. The goats we had are all gone because of theft and drought. There is no job to be done. We also do laundry, and we do not even have the energy to do business. We also said that our land is sand and is not arable, and we have to try anything that we can do to sell so that our children can get something to eat and also go to school (Personal communication, FGD, P3).

She further noted that *“diseases and hunger affect them so much and even make it difficult to get food.”* This is a clear reflection of the extent of diminished livelihood opportunities of the households in the Lokichar-Kochodin Basin of Turkana County.

These findings are incongruent with the findings by Akuja and Kandagor (2019), who observed that the prolonged drought of 2010-2011 in Turkana County had devastating effects on the livelihoods and was followed by other cycles of droughts in 2015 and 2018, which also coincided with the exploration of oil and pilot drilling were in progress. According to the authors, the drought and oil exploration events progressively reduced livelihood opportunities in the region. In terms of diminished livelihood opportunities. The finding also agrees with those of Adam, Owen and Kemp (2015). He reported that oil-related activities in the mining region restricted the access to livelihood opportunities of indigenous inhabitants and dwindling of vital resources, livelihood opportunities, and occupations. The project-affected households found it difficult to

access land for grazing and agriculture, thus exposing them to greater vulnerability to food insecurity and loss of household income, and thus diminished livelihoods. In another study by Mandishekwa and Mutenheri (2020), it was observed that through land loss, individuals lost their livelihood, including man-made and natural capital. From the study findings, it was evidenced that land was an integral asset for households, and its loss was damaging to the households' livelihoods. This is mainly because most rural communities are peasants, and therefore losing their land increased their vulnerability to loss of household income and risk of food insecurity.

Following findings presented on reduced livelihood opportunities, oil-related activities cost native individuals and their households their land, health, and general livelihoods, which manifest through the shock brought by the loss of crops, livestock, and lands, as well as delayed compensation, which subsequently increases the vulnerability of households' livelihoods. From a Sociological perspective, this finding reveals the extent to which oil mining activities and resulting displacement affect the livelihoods of the rural populace, leaving them in vulnerable states of their lives. It upholds the fact that oil-induced displacement is a social problem that affects different levels of human organization, from individuals and households to communities at large. The consensus between what existing literature says and the findings of this study is that impoverishment due to loss of capacity to acquire food and generate income is the most apparent form of livelihood vulnerability experienced by displaced households. In conclusion, therefore, this study argues that while oil mining is perceived as an inherent step towards economic growth and industrialization in developing economies, the case for those who are displaced is a total misery since the end consequence is most often impoverishment and the loss of livelihood.

Eroded Household Occupations

In arid and semi-arid places, key household occupations revolve around livestock, particularly ownership, management, and herding of livestock and petty trade (Obongo, 2018). Given the cycle of droughts and the ongoing exploration and drilling of oil in Southeast Turkana, this study relied on the hypothesis that households will experience an

increased risk of losing their occupation. Accordingly, the study assessed the vulnerability (risk or erosion) of the household occupation and the results are summarized in Table 2.

Table 2. Experienced Risk/Erosion of Household Occupations

		Frequency	Per cent
1	Limited risk/erosion of household occupations	102	24
2	Minimal Limited risk/erosion	130	31
3	Extensive erosion	98	23
4	Severe erosion of household occupations	91	22
	Subtotal	421	100
	Missing	5	
	Total	426	

Key: 1=Limited risk/erosion, 2= Minimal reduction 3=Extensive erosion and 4=Severe erosion (deprivation)

From Table 3 above, most (31%) of the households reported varying levels of risks of losing household occupations, while 24% reported limited risks of losing their occupations, and 22% reported severe loss of their occupations. This finding reveals that the impact of oil-induced displacement on household occupations varied among households, with the majority of the households experiencing limited reduction. This finding implies that while there was displacement, the households were able to access different occupations besides pastoralism, including employment opportunities offered by the oil-mining company. As reported by a key informant, *"Some local people have benefited from the new opportunities. The oil company has brought a demand for manual labour, local raw materials and developed small hospitality industry."* This is backed up by a member of the council of elders who noted that:

... the community has greatly benefited from the advent of Tullow. Tullow created businesses that helped their children go to school by building schools and providing sponsorship. The community also came to embrace the currency economy. There were also a water supply and the drilling of a borehole. People have also been employed in Tullow, even though not all of them. Those who were employed by Tullow are still depending on the money they got from Tullow even after Tullow left (Personal Communication, KII, and Member of council of elders).

Despite the opportunities offered at the company, some members of the community pointed out that the demand for local labour declined rapidly as the oil extraction activities progressed since it demanded increasingly specialized skills that were not available from the community, hence the loss of occupations for the unskilled individuals. This was noted in a focus group discussion with the council of elders, where P8 reported that:

Although oil exploration and extraction were expected to be accompanied by some occupations, it turned out that the local people did not have the necessary skills and/or competence. Contracts to supply goods and services required capital which was extremely scarce among the local population.

In conclusion, the employment opportunities offered by the company were not sustainable in the long term since most of the individuals lost their jobs due to lack of skills, thus resulting in loss and reduction of livelihood occupations.

Furthermore, regardless of the highlights on the positive impact that oil-related activities had on households in the study area, some of the respondents expressed their concerns on the extent of the reduction of their occupations due to the same. This was mainly noted with regard to the effect of the displacement on pastoralism and the loss of land. For instance, an assistant chief noted that,

'We are also concerned that pastoralism which is their main source of livelihood, was getting negatively affected because the company had occupied their grazing land and watering points. They are therefore worried that the company is out to 'finish them and they are totally opposed to its activities' (Personal Communication KII, Assistant Chief).

These findings support past findings on the impact of oil-induced displacement on households' occupation and how this affects their livelihoods. First, they are consistent with the findings of a survey by Obongo (2018) to examine the effects of oil activities on the livelihoods of the households in Turkana, which established that the fast growth of settlements due to crude oil exploitation had negative effects on pastoralism, which is a primary household livelihood occupation. They also agree with the arguments of Obida et al. (2021), who pointed out that oil-related environmental disasters have diminished the productivity of the communities living in oil mining areas, leading to income and occupational losses that bring about both involuntary and voluntary migrations. They also support the findings of Ogwang and Vanclay (2019), who found that the households' access to the lake was restricted due to oil exploration activities. Yet, Lake Albert was very fundamental to the livelihoods of the communities in

the area, particularly for water transport, fishing, and watering livestock, among others. This generally restricted the access to livelihoods of indigenous inhabitants as well as dwindling vital resources, livelihood opportunities, and occupations.

These findings point out that the oil-induced displacement posed significant threats to the livelihood occupations and opportunities of households residing in the Lokichar-Kochodin Basin of Turkana County. Generally, oil-related processes and activities, including the fast growth of settlements due to crude oil exploitation, had negative effects on pastoralism, a primary household occupation in the area. The findings reflect how many households in the mining region were displaced and isolated from their livelihood opportunities and occupations. Their farmlands are being degraded, hence crippling their socio-economic livelihoods. In conclusion, reducing livelihood occupations for households is one of the major aspects of livelihood vulnerability caused by oil-induced displacement.

Increased Disease Burden

In view of the cycle of droughts and the ongoing exploration and drilling of oil in Lokichar of Turkana, the study assessed the rate of diseases, and the results are summarized in Table 3.

Table 3. Experience of Increased Diseases

		Frequency	Per cent
1	Limited experience with diseases	94	22
2	Minimal experience with diseases	140	33
3	Extensive experience with increased diseases (Unusual increase of diseases)	97	23
4	Severe increase in diseases	92	22
	Subtotal	423	
	Missing	3	
	Total	426	

Key: 1=Limited experience, 2= Minimal reduction 3=Extensive increase and 4=Severe increase of diseases

The results reveal a general experience of diseases by the households, who reported varying levels of disease burden, where 56% reported a moderate to extensive increase of diseases and 22% indicated a severe increase of diseases. When probed about the experience of a sick person in the household, most of

the qualitative responses from the questionnaire revealed that most of the households experienced sick individuals monthly and throughout the year. These findings indicate that oil-related activities in the region had exposed individuals and households to diseases, mainly from pollution and environmental

degradation-associated causes. From an FGD, one of the participants (P7) noted that,

When Tullow came to talk to the community, they did not mention the chemicals and how destructive they will be. They only talked of the good things like employment and water. They are afraid of moving away from the sites regardless of the chemicals and emissions, as someone may come and take their land. Oil effects have made men weak and cannot satisfy the conjugal needs of their women. It has also affected their children as some children have been paralyzed. Some diseases like typhoid were never there before. Some kids born do not have hard borne covering their brains. The community does not know who Tullow is to channel their grievances directly. They just see cars being written Tullow (Personal Communication, P7 FGD).

Most participants in FGDs and KIIs noted some common diseases that have been increasingly experienced in the area since the inception of oil extraction in Turkana. The diseases mentioned included upper respiratory tract infections, malaria, diarrhoea, and pneumonia, diseases of the skin, urinary tract infections, eye infections, fevers, arthritis, and ear infections. Most of the respondents claimed that the environment, including water sources, had been contaminated with poisonous substances used in the exploration and extraction phases of crude oil, as well as air pollution. These findings reveal the increased disease burden on the communities, which is caused by pollution and contamination from the oil activities in the area.

This finding contributes further evidence on the impact of oil-related activities on the health of the individuals residing in oil-mining regions. They agree with the findings of Aboda (2018), who conducted a qualitative study to examine the livelihoods of people displaced and resettled due to oil refineries in Uganda and established that people suffered food crises and disease threats caused by contaminated water sources. Furthermore, these effects force individuals to involuntarily migrate from their homes, thus further worsening their experiences with oil-induced displacement. This is in line with the sentiments of Terminiski (2011), who argues that oil-induced displacement is a social problem, which could be in the form of environmentally induced displacement, whereby the chemical contamination, contamination of drinking water and resulting loss of agricultural productivity and increased disease burden force individuals to leave their places of residence. In inference, oil mining and oil-induced displacement have ripple effects on the livelihoods of households, including increased disease burden.

Vulnerability of Socio-Economic Endowment

The study used the vulnerability of socio-economic endowment to refer to disruption (depletion or erosion) of valuable assets that the household has developed over the years, which may include physical, economic and social assets. It also hypothesized (predicted) that the impoverishment and displacement effects of the oil industry will increase the vulnerability of the household socio-economic endowment. For example, it will increase the risk of disruption (depletion and/or erosion) of accumulated physical, economic, and social assets. Accordingly, the study assessed vulnerability to socio-economic endowment and the results are summarized in Table 4 below.

Table 4. Vulnerability, Reduction of Socio-Economic Endowment

		Frequency	Per cent
1	Limited risk	102	24
2	Minimal reduction	101	24
3	Extensive reduction	125	30
4	Severe reduction	95	23
	Subtotal	423	100.0
	Missing	3	
	Total	426	

Key: 1=Limited Vulnerability 2= Minimal reduction 3=Extensive reduction and 4=Severe reduction, disruption

The findings in Table 5 show that most households (30%) reported extensive depletion (reduction) of socio-economic endowment, and 23% reported severe depletion of the socio-economic endowment. The finding reveals that most of the households experienced depletion of their socio-economic endowment due to the adverse effects of the discovery, exploration and extraction of oil. As reported by one of the elders, *“We have experienced the extensive vulnerability of socio-economic endowment, and we risk or fear that part of our socio-economic inheritance will be reduced, eroded, or depleted.”* In an FGD, one woman (P1) noted that *“The displacement from the oil wells has led to the loss of some of the things that are crucial for our survival including schools for our children, our land that we rely on for agriculture and livestock keeping, as well as markets.”*

The findings conform with those of Aboda (2018), who in the study revealed that the establishment of the oil refinery resulted in the loss of livelihood opportunities and socio-economic endowment by the households, as evidenced by an array of challenges such as reduced access to key infrastructural facilities including schools, roads, health centers, and markets among others. Furthermore, the author highlighted that displaced households faced a reduction of their livelihoods through reduced access to water, land for agriculture and livestock keeping, and wood fuel, thus making it hard for them to rebuild their livelihoods in resettlement areas. They are also reconcilable with those of Sandra & Uche (2019), who found that the displaced households in the delta region experienced alienation, marginalization, and deprivation, isolation from their livelihood opportunities and occupations, and the degradation of their farmlands hence crippling their socio-economic livelihoods. It is evident from the study; therefore, mining-induced displacement resulted in the impoverishment and reduced socio-economic endowment of individuals and communities in the mining areas of Turkana County.

It is important to note that livelihoods in the context of the study denoted the activities, assets, and capabilities that people require for a means of living.

Overall, the study established that mining-induced displacement resulted in the impoverishment and reduced socio-economic endowment of individuals and communities in the mining areas of Turkana County. More specifically, it is evident from this study’s finding that oil-related activities cost native individuals and their households their land, health, and general livelihoods, which manifest through the shock brought by the loss of crops, livestock, and lands, as well as delayed compensation, which subsequently increases the vulnerability of households’ livelihoods. From a Sociological perspective, this finding reveals the extent to which oil mining activities and resulting displacement affect the livelihoods of the rural populace, leaving them in vulnerable states of their lives. It upholds the fact that oil-induced displacement is a social problem that affects different levels of human organization, from individuals and households to communities at large. The consensus between what existing literature says and the findings of this study is that impoverishment due to loss of capacity to acquire food and generate income is the most apparent form of livelihood vulnerability experienced by displaced households.

Pertaining household occupations as a key facet of sustainable livelihoods, the study’s findings point out that the oil-induced displacement processes posed significant threats to the livelihood occupations and opportunities of households residing in the Lokichar-Kochodin Basin of Turkana County. Generally, oil-related processes and activities, including the fast growth of settlements due to crude oil exploitation, had negative effects on pastoralism, a primary household occupation in the area. The findings reflect how many households in the mining region were displaced and isolated from their livelihood opportunities and occupations. Their farmlands are being degraded hence crippling their socio-economic livelihoods. Concisely, the reduction of livelihood occupations for households is one of the major aspects of livelihood vulnerability caused by oil-induced displacement.

There is no doubt that oil mining and oil-induced displacement have ripple effects on the livelihoods of households, including increased disease burden. In

the current study, it was evidenced that some common diseases have been increasingly experienced in the area since oil extraction in Turkana. The diseases mentioned included upper respiratory tract infections, malaria, diarrhoea, and pneumonia, diseases of the skin, urinary tract infections, eye infections, fevers, arthritis, and ear infections. Most of the respondents claimed that the environment, including water sources, had been contaminated with poisonous substances used in the exploration and extraction phases of crude oil, as well as air pollution. These findings reveal the increased disease burden to the communities caused by pollution and contamination from the oil activities in the area.

Lastly, the vulnerability of socio-economic endowment was examined in the study to refer to the disruption (depletion or erosion) of valuable assets that the household has developed over the years, which may include physical, economic and social assets. It was established that most of the households experienced depletion of their socio-economic endowment due to the adverse effects of the discovery, exploration and extraction of oil. This finding is reconcilable with those of Sandra & Uche (2019), who found that the displaced households in the Niger Delta region experienced alienation, marginalization, deprivation, isolation from their livelihood opportunities and occupations, as well as the degradation of their farmlands hence crippling their socio-economic livelihoods.

CONCLUSION AND RECOMMENDATIONS

Conclusion: From a Sociological perspective, these findings reveal the extent to which oil mining activities and resulting displacement affect the livelihoods of the rural populace, leaving them in vulnerable states of their lives. It upholds the fact that oil-induced displacement is a social problem that affects different levels of human organization, from individuals and households to communities at large. The consensus between what existing literature says and the findings of this study is that impoverishment due to loss of capacity to acquire food and generate income is the most apparent form of livelihood vulnerability experienced by displaced households.

Recommendations: The negative practices related to oil production that pose threats to the livelihoods of the people should be publicised in the media so as to create greater awareness among all stakeholders. The resettlement of the displaced households should be conducted in line with plans that comply with international directives and laws so as to ensure the communities' access to common goods such as water sources, pastures, and arable land. More studies should be carried out on the implications of oil exploration, extraction, and commercialization on other sectors of the society in Turkana, such as family, education, infrastructure, and benefits, among others, since they all influence the capacity of the community members to dealing with oil-related vulnerabilities.

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