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For better or worse: major developments affecting resource and conflict dynamics in northwest Kenya

DOI 10.1515/zfw-2016-0001

Abstract: The county of Turkana, located in northwest Kenya, has a long history of violent conflicts. These are fought by pastoral groups over scarce water, land, pasture and livestock resources. Now oil has been found in Turkana, fuelling both hopes for a resource blessing and fears of a resource curse. The discovery of oil coincides with four other major developments, namely the process of devolution, the large-scale infrastructure project LAPSSET (Lamu Port Southern Sudan-Ethiopia Transport), the discovery of significant aquifers and the Gibe III dam in Ethiopia. The aim of this paper is first to give an overview of these developments, and second to explore their interactions and their effects on existing and potentially new resource and conflict dynamics. The article is based on a review of the academic literature as well as newspaper articles, government records and company publications. Further, we analyze security data and draw on extensive field research conducted in northwest Kenya over the past five years. To illustrate potential pathways, we draft a worst and best case scenario. Our results suggest that the described developments will strongly affect the existing water, land and livestock resources and create new ones in the form of revenues, business opportunities, employment and infrastructure. To decrease the conflict potential and to maximize benefits, it is highly important for any project to closely include the local communities in a fair and transparent manner.

Keywords: conflict, development, Kenya, land, oil, pastoralism, resources, Turkana, water.

1 Introduction

When the media reports about Turkana in northwest Kenya, attributes of poverty, hunger, drought and violent conflict are rarely missing (for example Kenya Citizen TV 2011; Guardian 2009; Daily Nation 2015d). In most cases the pastoralists in Turkana are portrayed as helpless, backward and victims of climate change (Guardian 2009; GoK 2007). Climate change is indeed projected to lead to a warmer and more variable climate in East Africa which in turn influences the conflict dynamics between the different pastoral groups (see Schilling et al. 2014; Ide et al. 2014). And for a long time, the government of Kenya had shown little interest in mitigating the violent conflicts or developing Turkana and northern Kenya in general. The low income level and the difficulty to tax pastoralists due to their mobility, in combination with the poor accessibility of and insecurity in the region have resulted in economic and political marginalization of Turkana (GoK 2007). Field research conducted among Turkana pastoralists suggests that for a long time communities in Turkana have felt to be “on their own” or simply “forgotten” (see Schilling et al. 2012; de Vries et al. 2006; McCabe 2004).

This is changing rapidly. Several large scale developments in Turkana have recently sparked the interest of a range of local, national and international actors. The key development is the discovery of oil in 2012. According to the UK-based operating company Tullow Oil, the main basin in Turkana alone contains more than 600 million barrels of oil (Tullow 2014a). “Northern Kenya has the potential to become a significant new hydrocarbon province” as Tullow’s exploration director stresses (Tullow 2014a). The government of Kenya received the discovery of oil very positively and community hopes were raised for livelihood improvements and development (GoK 2012; BBC 2014).

The discovery of oil coincides with four other major developments, namely the process of devolution, the large-scale infrastructure project LAPSSET (Lamu Port Southern Sudan-Ethiopia Transport), the discovery of significant aquifers and the Gibe III dam in Ethiopia. Devolution implies the decentralization of power and responsibilities among sub-national government structures. The 2010

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constitution stressed the importance of devolution and its implementation started after the presidential elections in 2013 (GoK 2010; Vasquez 2013). According to the World Bank (2015) devolution in Kenya is “the most rapid and ambitious devolution processes going on in the world”. As part of the effort to reduce developmental disparities across Kenya, Turkana has received significant financial benefits from the devolution funds (Nairobi News 2015).

Another key development is the infrastructure project LAPSET. The aim of LAPSET is to improve the regional infrastructure between Kenya and its neighbors, particularly South Sudan and Ethiopia via roads, railways and oil pipelines. Within Kenya the oil pipeline is planned to run over a distance of 850 km from Turkana in the northwest of the country, all the way to a maritime terminal in Lamu, located at the coast of south-east Kenya (Tullov 2014b).

In September 2013 vast aquifers were discovered in Turkana. The aquifers have the potential to supply the arid to semi-arid country of Turkana with water for human and livestock consumption as well as agriculture. Replenishing rates of about 1.2 billion cubic meters annually would be enough to supply the entire county with water (Guardian 2013). But so far the exploration and exploitation process has been slow and the benefits of the aquifers for the communities have been very limited (Guardian 2015b).

In Ethiopia the Gibe III dam has started to generate power in October 2015. The dam is the biggest hydroelectric project ever realized in Ethiopia. It dams the Omo River which is the main tributary to Lake Turkana (Hydroworld 2015). The dam is therefore expected to significantly decrease the water level of the lake and thereby strongly affect livelihoods in Turkana (Guardian 2015a).

As all of these developments are fairly recent ones, the academic literature on them and their effects on resource and conflict dynamics is limited. Only some aspects have been covered. Recently, Schilling et al. (2015) have analyzed (potential) effects of oil exploration on climate change vulnerability and conflict. But this and other studies on oil have been done mostly on a local scale (see Johannes et al. 2014; Mkutu 2014). On the other hand, studies on devolution in Kenya have rarely considered its local effects (for example Cornell/D’Arcy 2014). Vasquez (2013) has discussed oil with reference to devolution and LAPSET but the issues have developed further since the study was published.

The aim of the present study is to give an overview of the most recent key developments and to discuss their effects on resource and conflict dynamics in Turkana. To achieve this aim, the paper is structured as follows; first, we introduce the methods, including the research area, data collection and conceptual framework. Second, we

briefly discuss the recent security situation in northwest Kenya. Third, we give an overview of the key developments, including oil, LAPSET, devolution, aquifer and the Gibe III dam. We then outline the key interactions of the developments and show how they influence resource and conflict dynamics in Turkana. In a fourth step, we develop two scenarios. The worst case scenario illustrates how an interaction of the described developments may aggravate existing conflict dynamics and potentially create new ones. The best case scenario on the other hand, shows how the developments may mitigate existing conflicts and lead to a peaceful and prosperous Turkana. The scenarios should not be misunderstood as an attempt to predict the future. They rather serve as an illustration of potential pathways. In the final section we conclude with recommendations on how to avoid the worst case scenario and to make the best case scenario more likely.

2 Methods

2.1 Research area

The study focuses on Kenya with some reference to Uganda, South Sudan and Ethiopia as part of the discussion of the LAPSET project and the Gibe III dam. Within Kenya, the field research was mostly conducted in the southern part of Turkana County (Fig 1.) and to a limited extent in the northern part of West Pokot County. Turkana has a semi-arid to arid climate with rainfall in regular years concentrated in the months March to May (“long rains”) and October to December (“short rains”) (McSweeney et al. 2012). Between 1950 and 2012 the drought frequency in Turkana has increased (Opiyo et al. 2015). Climate change is likely to contribute to this trend through an increase in temperature and a more erratic rainfall pattern (Schilling et al. 2014).

The last official census reports a population of about 855,400 for Turkana County (KNBS 2010). A recent report citing the unpublished County Integrated Development Plan for Turkana gives a population size of almost 1.3 million people for 2015 (Human Rights Watch 2015). The majority of the Turkana population practices nomadic pastoralism. Some agro-pastoralism is found along the seasonal rivers Turkwel and Kerio. Around Lake Turkana, communities mainly depend on fishing for their livelihood (Yongo et al. 2010).

In a formal sense, Turkana is the poorest and least developed county in Kenya. Most Turkana never attended a school or had a formal job. The education, health and

road infrastructure ranks among the lowest in the country (Kenya Open Data 2011a, 2011b). Insecurity caused by violent conflicts between pastoral groups and highway banditry (as discussed later in the paper) poses an obstacle to integrating the region into the national economy.

Figure 1: Oil exploration and aquifers in Turkana and LAPSSET in Kenya. Source: own draft based on LCDA (2015) and RTI (2013).

The social contract between local communities in Turkana and the central government in Nairobi is weak. There is low confidence amongst the Turkana in the national government, particularly because it does not provide security against attacks from neighboring pastoral groups (Schilling et al. 2012; Mkutu 2015, see also section on security).

2.2 Data collection

The study uses both qualitative and quantitative data. The qualitative data for this study were collected during several research trips in March and September to December 2011, October 2013, April 2014 and November 2015. The first trips in 2011 mostly focused on the drivers, dynamics and implications of the violent conflicts between the Turkana and the Pokot. The Turkana live predominantly in Turkana County while the Pokot mostly inhabit West

Pokot County and eastern Uganda (Fig. 1.). The purpose of the more recent trips was to understand the larger scale developments (oil, LAPSSET, devolution, aquifers and the Gibe III dam) and their implications for Turkana. In total about 300 people were heard in individual interviews, small group interviews and focus group discussions. Most of the people interviewed were Turkana and Pokot community members including women, pastoralists, elder, youths and village chiefs. Government representatives and members of non-governmental organizations (NGOs) working on relevant topics were interviewed as well. Efforts to get interviews or statements from Tullow remained unsuccessful. This was partly compensated by in-situ observations. One of the authors of this paper works and is based in Turkana while another one is based in Nairobi and visits Turkana frequently.

The quantitative data for this study consists of records collected by police and other security providers. The data includes security relevant incidences in the following categories: livestock raids, livestock theft (without humans being hurt or killed), highway banditry, any killing of a human being and inter-communal attacks. The records cover the counties Turkana, West Pokot, Baringo, Laikipia, Samburu and Trans Nzoia but the focus of the analysis was placed on Turkana. The records include the date and location of the incident as well as a categorization and brief description of the incident.

As the described developments continuously unfold, the review of the academic literature is supplemented with newspaper articles, government records and company publications.

2.3 Theoretical approach

Several attempts have been made to explain conflicts over resources. The literature can be broadly divided into studies on renewable (water, land, forests and alike) and non-renewable (oil, gas, diamonds and alike) resources. Within the renewable resource and conflict literature, Thomas Homer-Dixon is likely to be among the most influential and controversial scholar. Based on a series of case studies conducted in the 1990s, he stressed that scarcity of land, water or forest leads to violent conflict, particularly when coupled with strong population growth and unequal resource distribution (Homer-Dixon 1999, 1994; Homer-Dixon/Deligiannis 2009). Overall, his research suggests “significant causal links between scarcities of renewable resources and violence” (Homer-Dixon et al. 2011, 25). These links mainly work through two key mechanisms which Homer-Dixon called ecological mar-

ginalization and relative deprivation. Ecological marginalization is the process in which “high population densities [...], combined with a lack of knowledge and capital to protect local resources, causes severe environmental damage and chronic poverty” (Homer-Dixon 1994, 10). Relative deprivation is a situation in which people are “relatively deprived when they perceive a widening gap between the level of satisfaction they have achieved (usually defined in economic terms) and the level they believe they deserve” (Homer-Dixon 1994, 26).

Homer-Dixon’s work and conclusions have been widely criticized, mostly by political ecologists like Nancy Peluso who have warned against reducing conflicts to their resource dimension while neglecting their social and political context. Violence is “a site-specific phenomenon deeply rooted in local histories and social relations but also connected to transitional processes of material change, political power relations, and historical conjuncture” (Peluso/Watts 2001, 3). Peluso/Watts (2001) stressed that resource access, determined by socioeconomic and political conditions, is more important for conflicts than resource scarcity (see also Hartmann 2001).

Particularly Homer-Dixon’s scarcity argument but also political ecology has recently experienced a renaissance as part of the ongoing debate on the relations between climate change and conflict (Scheffran et al. 2012; Ide 2015).

Within the literature on conflicts around non-renewable resources, the phenomenon of the resource curse is particularly relevant for this paper. Richard Auty (2004) coined the term “resource curse” which describes the process in which the abundance of non-renewable resources is detrimental to a country’s economy rather than boosting it. Mainly developing countries with high levels of corruption are found to be prone to the resource curse. Patronage systems prevent a trickle-down effect of resource revenues to the local level and poorer parts of the population. Paul Collier and colleagues then show how resource rents and weak institutions increase the likelihood of civil conflict (Collier/Hoeffler 2005; Collier et al. 2009).

Drawing on decades of experience in the extractive industry sector, UNEP (2015, 29) notes “when key stakeholders are poorly engaged, marginalized, or excluded from decision making or related engagement processes, opposition is more likely and tensions can escalate rapidly. In some cases, marginalized stakeholders may develop strategies of political confrontation or violence to make their voices heard”.

Philippe Le Billion’s work provide insights into how the location and type of resource makes different types of conflicts more likely (Le Billion 2001). The location of the resource is either “proximate” or “distant” depending on

the distance to the capital. “Diffuse” and “point” are used as categories to distinguish resources such as cropland or coffee from oil or gold. According to Le Billion’s framework a point and distant resource makes secession more likely (Le Billion 2001).

3 Security situation in Turkana

In the north-western counties, 243 security incidences were recorded by security providers between March 2014 and September 2015. On average, 13 incidences occurred per month. The majority of incidences (81 %) took place in Turkana, followed by Baringo (9 %), West Pokot (6 %) and with a significantly lower number of incidents in the other counties Laikipia, Samburu and Trans Nzoia (4 %).

Since Turkana has the highest number of reported incidences and the oil exploration is most prominent here, Turkana is considered in more detail. Fig. 2 shows the number of incidences by type.

It is noticeable that in each month of 2014 the number of raids was higher than the number of banditry incidences. This relationship is reversed in 2015 (with the exception of February). Between June and September, no raids were recorded in Turkana. The reduction of raids could be attributed to a peace caravan launched by 15 politicians from Turkana, West Pokot and Baringo in late May 2015 (Daily Nation 2015c). Since June 2015, all security incidences were categorized as banditry, with particular spikes in August and September. Almost all banditry occurred along the A1 highway. The A1-section around Kainuk (Fig. 1.) is a particular hot spot of highway banditry. On the one hand, the increased traffic, particularly caused by the oil operations in Turkana, offer bandits more opportunities for attacks. On the other hand, the insecurity in the region poses an obstacle to any major development.

4 Major developments

The following sections give a brief overview of the major developments unfolding in Turkana and how these affect or could affect resource and conflicts dynamics. The last sub-section summarizes the interaction of the developments.

Figure 2: Number of security incidences by type in Turkana Country between March 2014 and September 2015. Source: own draft based on (unpublished) data of security providers.

4.1 Oil

In 2012 oil was found in Turkana. Since then the economic viability of the significant reserves has been confirmed (Tullow 2014a). Once the oil production starts, it could reach 100,000 barrels per day (Standard 2015). Oil exploration in Turkana is currently most advanced around Lokichar (Fig. 1) where Tullow Oil is the main operating company. The two other companies present in Turkana County are CEPESA and Bowleven. Tab. 1 shows the five phases of a typical oil cycle. Currently Tullow is about to finalize the appraisal phase and enter the development one. The production is expected to start in 2020 (Oil News Kenya 2015). The progress of the development and particularly the production phase is closely tied to the completion of the pipeline which in turn is part of the LAPSET project (see next section for details). Another key factor influencing the progress of the oil development in Turkana is the global oil price which has decreased from more than \$100 per barrel at the time of oil discovery in 2012 to around \$33 in February 2016 (Bloomberg 2016). This sharp decrease has forced Tullow to cut its global exploration and appraisal budget, and focus more on West Africa (Financial Times 2014; Daily Nation 2015e; Business Daily 2016).

4.1.1 Effects of oil on existing resources

Oil in Turkana will affect existing resources and create new ones. The key existing resources, important to the local pastoral livelihoods are water, land and livestock. Our interviews with communities in Turkana South and Turkana East suggest that when they noticed that Tullow

was drilling for water to support the exploration and appraisal operations, the communities demanded to also benefit from the additional water. In response, Tullow set up water tanks in some villages and along the main road which improved the access of the communities to water. However, it is uncertain how reliably Tullow will keep refilling the water tanks. In the long run the water-intensive oil operations will likely aggravate the water situation for the communities (Schilling et al. 2015).

Land in Turkana is community land meaning it cannot be owned by individuals and the community is allowed to access and utilize it. The key legal documents are the Land Act of 2012 and the Community Land Bill (2015) which lays out the process for communities to register land and to protect their interests. However, as Mkutu/Wandera (2015, 3) have pointed out, the process of registering land “may be out of reach for many illiterate communities, or may benefit well connected elites from the communities”. The Land Act of 2012 allows for “compulsory acquisition” which refers to “the power of the State to deprive or acquire any title or other interest in land for a public purpose subject to prompt payment of compensation” (National Council for Law Reporting 2012, 10). This raises questions of the extent and the recipient of the compensation.

In Turkana the national government has sold permits to Tullow for oil operations. Just recently Tullow has leased an area of 172.4 ha nearby Lokichar “from Turkana residents in Kapese” to build a “mammoth logistics centre” (Business Daily 2015). In addition, drilling sites have been fenced off and these areas are hence no longer accessible for pastoralists and their herds. Particularly during dry periods, a loss of pasture can result in losses of livestock (Opiyo et al. 2014). Pollution of land, water and

Table 1: Oil cycle and key attributes.

Phase	Exploration	Appraisal	Development	Production	Phase-out
Length in years	1–5	4–10	4–10	20–50	2–10
Costs	High	High	Very high	Low/medium	High
Revenues	None	None	Low	Very high	Very low
Need for highly-skilled labour	Low	Low	Low to medium	Low to medium	Low
Need for unskilled labour	Medium/high	Medium/high	High	Low	Low

Source: own draft based on Darko (2014).

air by oil and related substances are further concerns expressed by community members. Cutting of trees related to oil operations (for instance for seismic testing) limit the shade available for humans and livestock to escape the heat. Community members in Nakukulas reported that the increase of road traffic has led to livestock being injured or killed by vehicles.

4.1.2 New resources

The new resources and benefits that oil brings to Kenya are revenues, employment, business opportunities and new infrastructure. Revenues are generated from exploration licenses and permit fees, bonuses, state shares in oil production and especially later on taxes (petroleum production tax, income tax, property tax and alike) (see also Morrison 2009). According to the National Energy Policy oil revenues are to be shared between the national government (receiving 75 %), the county government (20 %) and local communities (5 %). The share for the local communities “will be delivered through the county government” (GoK 2014b, 130).

Employment opportunities vary along the oil cycle (Tab. 1). During the first three phases the demand for unskilled labor is medium to high. However, during the production phase which is highly mechanized, the demand for unskilled labor drops. For instance, once the oil production commences, the need for site and road marshals, mud mixers and seismic survey crew who were largely engaged in the early stages of the exploration will decrease. Overall, the oil industry is a capital rather than labor intensive industry. This particularly applies to unskilled labor.

People working for Tullow bring purchasing power to Turkana which in turn creates business opportunities, for instance in terms of accommodation and restaurants. This can be observed in Lokichar which has grown significantly since operations have started. Other indirect business opportunities can be found in the logistics and transport industry.

New roads connecting oil exploration sites and the main road have been built. The airstrip in Lokichar has been renewed. As part of their social engagement, Tullow has also paid for a classroom for the primary school in Nakukulas.

4.1.3 Conflict and security implications

The effects of oil on existing and new resources have positive and negative aspects (Tab. 2). While the oil revenues can strengthen the fiscal capacities of the government, they also have the potential to lead to disagreement between the national, county and local government over how revenues are shared (Star 2012). The main drivers of conflict between Tullow and communities, particularly in Nakukulas, are not the loss of (ancestral) land or pollution of resources. The key drivers of the negative perception among the communities towards Tullow are the disappointed expectations for (a) employment and (b) a significantly improved water supply (see also Schilling et al. 2015; Vasquez 2013). Our research suggests that these expectations are poorly managed both by the government and Tullow. Lack of communication between Tullow and the communities is a key problem (see also Johannes et al. 2014). The perception of losing while outsiders come to Turkana and prosper has resulted in community road blocks and even storming of oil sites (Nation 2013).

To deal with these interruptions, Tullow has placed security personnel to protect the operations. On the one hand, community members reported that this has decreased livestock raiding in the vicinity of the oil sites. On the other hand, however, it has left Turkana communities along the borders with enemy tribes (particularly the Pokot) exposed to attacks as Tullow recruited community guards (so called Kenya Police Reservists, KPRs) from those communities to protect oil sites (see also Schilling et al. 2015; Mkutu 2015). In several focus group discussions community members stated that the government is always quick to respond whenever communities sets up a road

Table 2: Benefits and externalities of oil.

Benefits	Externalities
Revenues from oil	Disagreement between different levels of government over revenues
Employment opportunities	Community frustration over limited employment in the oil sector
Stimulation of local economy/business opportunities	Loss of (access to) pastoral/community land
Improved infrastructure	Pollution of groundwater, soil and air
Improved water availability for communities due to water tanks	Reduced water availability for communities due to water needs for oil operations
Improved education	Reduction of pastoral mobility (through fenced off areas and oil pipelines later on)
Improved security around oil sites	Reduced security in areas away from oil sites

Source: own draft based on field research.

block but when the Turkana are raided, the government does not respond at all.

4.2 LAPSSET

The aim of the “Lamu Port Southern Sudan-Ethiopia Transport” (LAPSSET) project is to strengthen transport connections between Kenya and its neighbors, particularly South Sudan and Ethiopia. Recent and reliable cost estimates for the entire project do not exist but earlier ones suggested about KSH2.5 trillion (\$29.2 billion) (Africa Review 2013). The project consists of three major components: railways, highways and oil pipelines. While the further discussion focuses on Kenya, the oil pipeline between Kenya and South Sudan would be important for the country as the pipeline would decrease the heavy dependence on Khartoum for exporting oil (see Economist 2013).

Within Kenya the three components are planned to run parallel to each other for almost the entire route (see Fig. 1) to reduce construction and maintenance costs (LCDA 2015). The section of the oil pipeline between Turkana and the Lamu maritime terminal, located at the coast of south east Kenya is expected to be around 850 km long (Tullov 2014b). The government of Kenya is expected to bear the costs of \$18 billion, possibly with support from the US government (Tully 2016).

The LAPSSET oil pipeline and road networks in Kenya are planned to be completed by the end of 2016. The railway and other components such as the refineries, airports, and resorts are expected to be completed in a step-by-step process until 2020 (LCDA 2015). The construction of the Lamu Port is currently in progress but lack of funding is causing delays (Lugaria 2015). While port buildings

and facilities are completed, so far only three out of the planned 32 berths are being built (LAPSSET 2015b).

The governments of Kenya and Uganda agreed on an oil pipeline to connect the LAPSSET oil pipeline in Turkana with oil fields in Uganda. However the high costs of KSH400 billion (\$4.8 billion) have led the Ugandan government to consider a less expensive alternative route to the Tanzanian port of Tanga (Daily Nation 2015a; LAPSSET 2015a).

4.2.1 Impacts on resources

The LAPSSET infrastructure is planned to cut through major pastoral areas located in northwest and north central Kenya (Fig.1). Land, pasture and migration routes will likely be significantly affected by LAPSSET. In the feasibility study, it is acknowledged that “from the viewpoint of environmental conservation, the LAPSSET [...] railway, highway and pipeline must have remedial measures against the impacts on wildlife and livestock. An example is the influence of their construction works to migration/movement of these animals across the facilities. The corridor shall not block them completely. It is necessary to construct culverts and/or other appropriate passages across the corridor bank” (LCDA 2015). Particularly, the degree of the oil pipeline running under ground will determine how strongly it will interrupt pastoral migration routes. Possible leakages of the oil pipeline are a concern in terms of pollution of soil and groundwater.

If LAPSSET is realized as planned, the accessibility of northwest and north central Kenya will improve significantly. This in turn will create business and employment opportunities as people and goods will be able to enter and leave northern Kenya more easily.

LAPSSET is planned to run through the areas of Kenya that are mostly exposed to pastoral conflict and insecurity associated with highway banditry (see section 3). In addition, the project will run in close proximity to the refugee camps in Kakuma and Dadaab (Fig. 1). LAPSSET itself has the potential to become a source of conflict mainly through its effects on land and employment. The announcement of the LAPSSET route has sparked interest of and competition between investors, conservancies, private individuals and other actors who may try to acquire land prior to the start of the project (Daily Nation 2015b). There are further concerns that local (primarily pastoral) communities may be forcefully evicted from their land because most communities do not have legal land titles. The concern that communities' rights will largely be ignored, is further increased by NGOs pointing out that the project is financially driven by a constellation of private actors whose human rights obligations range from "suspect" to "dubious" (Opiata 2013, 1).

Similar to the exploration of oil in Turkana, limited participation of local communities in arising employment communities is likely to become a source of tension between project implementers and local communities. In Lamu County, where the progress of LAPSSET is most advanced in terms of the Lamu Port, these tensions are already noticeable. The Orma, a pastoral and already marginalized community in Lamu express concerns and resistance towards LAPSSET. In a press statement the chief petitioner warns that the "Lamu community is greatly alarmed by the threats posed by the Lamu port after the government has failed to involve us in the project, has failed to enact land reforms and has failed to stop land speculation in the area" (Baddi 2015, 1). The statement further criticizes the "failure to implement an environmental impact assessment" and the "lack of consultation with Lamu people" (Baddi 2015, 1).

To decrease the likelihood of local resistance and to enable the youth to benefit from employment opportunities associated with LAPSSET, the government of Turkana County plans a program for youth entrepreneur empowerment which aims at building capacity amongst the youths through training on tendering and procurement processes (GoK/UNDP 2015).

4.3 Devolution

Since March 2013, Kenya has been undergoing devolution (Vasquez 2013). Devolution in Kenya seeks to bring government closer to the people, especially those living in marginalized areas. Studies suggest that devolution

has the potential to improve governance and efficiency of resource allocation, particularly in countries with plural societies struggling with inequalities, conflict and corruption (Shackleton/Campbell 2001; Dent 2004). In Kenya devolution implies key shifts of power, responsibilities and resources from the national to the 47 newly created county governments who are now responsible for the health sector, agriculture, urban services, local infrastructure, pre-primary education and childcare. The county government therefore has significant control over major public services and finances. Each county government consists of a county governor (also referred to as the county chief executive officer) who is directly elected by the people and the county executive committee. Apart from the governor and the deputy governor, the committee is composed of members appointed by the governor who are then approved by the county assembly. The county assembly in turn consists of elected representatives from each ward and representatives of minority groups such as persons with disabilities. Among the roles of the assembly is the approval of the budget and expenditures of the county government (GoK 2010; Kenyan Section of the International Commission of Jurists 2013).

According to the constitution from 2010 revenues raised by the national government are to be shared equally between the national and county governments (GoK 2010). Being the most marginalized county in Kenya, Turkana has received KSH9.1 billion (\$86.8 million) in the financial year 2014/15 and KSH10.2 billion (\$97.3 million) in the financial year 2015/2016 (Nairobi News 2015; see also GoK 2014a).

Given the new financial resources and governance structure, there is potential for improvements in Turkana in terms of infrastructure and service delivery. Some progress has already been made. For example, the number of public dispensaries increased from 71 in 2012 to 131 in 2015. The number of early child centers in Turkana increased from 662 in 2009 to 772 in 2015. And while the governor acknowledged that water is still a significant challenge in Turkana, he stressed that the government has dug 105 additional boreholes since 2012, resulting in 606 boreholes in 2015 (CRA 2015). The first university in Turkana was opened in September 2015, including an Institute of Petroleum Studies and Renewable Energy (Daily Nation 2015f). The development agenda of Turkana is set out in the County Integrated Development Plan which will be supported by the United Nations Development Programme (UNDP 2015). According to the Kenya School of Governance (2015, 3), "the space for citizen-state interaction continues to expand" under devolution.

While all of these are certainly positive developments, devolution also creates expectations among the local communities, particularly that the new financial resources received by the central government will lead to actual improvements of the local living conditions in terms of rights and provision of basic services. If the county and lower levels of government are unable to meet these expectations because of a lack of capacity or inefficient resource use, community frustration and an increased conflict potential are likely outcomes (see also section on threats in GoK 2015). As described earlier, security and access to resources are major concerns of the communities in Turkana. However, the provision of security and the exploitation of natural resources (such as oil) still fall under the jurisdiction of the central government, even under the devolved governance structure. Cooperation and coordination between the central government, the county government and the local government therefore pose key challenges. With respect to security provision, Mkuu et al. (2014, 10) note that “overlapping roles, tensions and mistrust abound between various security players in counties, including county governments, NGAO [National Government Administration Office], and the police, have created security gaps in some instances”. In addition disagreement among counties over county borders is coming up as an issue. Particularly since oil was found in Turkana, increased tensions can be noted between the county government of Turkana and the neighboring county government of West Pokot over already contested land (County Government of West Pokot 2015; see also Greiner 2013).

4.4 Aquifers

Two significant water aquifers were discovered in 2013 in the Lotikipi Basin and the Lodwar Basin (see Fig. 1 and RTI 2013). Since then, several exploration drillings have been conducted and a nationwide mapping program for groundwater has been launched (Radar Technologies International 2015; Guardian 2015b). In 2013 an assessment of the aquifers in Turkana found “great potential” (Radar Technologies International 2013, 73) especially for the aquifer in Lodwar. Referring to the water reserves discovered in Turkana in general, the Kenyan Minister of Environment, Water and Natural Resources said that “it is not too deep and ought not to be too expensive to develop” (Guardian 2013). More recent tests of the aquifer conducted in northern Kenya however indicate that a large portion of the water might be too saline for human consumption, livestock or irrigation. Salt levels were found to be seven times higher than the safe limit determined by the World

Health Organization (Reuters 2015). This report is challenged by Kenyan water officials who stress that adjoining wells were within acceptable saline limits for human consumption or at least suitable for livestock consumption and agriculture (Voice of America 2015). In Lodwar exploitation of one borehole connected to the aquifer has started but the actual relevance of the aquifers in Turkana to supply larger human and livestock populations is currently unclear. Overall, further studies are needed to adequately quantify the reserves and to assess the quality of the water.

4.5 Gibe III dam

To generate electricity for the rising demand in East Africa and to boost the economy, the government of Ethiopia approved the construction of a major dam and hydroelectric power plant on the Omo River that supplies more than 80 % of the inflow to Lake Turkana (Velpuri/Senay 2012). Three dams are already completed in the Omo watershed while two more dams are planned. The Gibe III dam has just been completed. It has been running on limited capacity since June 2015. The dam has an installed capacity of 1,870 MW and a catchment area of 34,150 km² (Gibe 3 Hydroelectric Project 2012).

Assessments of the project’s potential hydrological and environmental impacts are scarce, in part due to the remote location and poor data situation on most key variables such as rainfall and discharge. Velpuri/Senay (2012) calculated that the Gibe III dam could reduce Lake Turkana’s depth by about 1.5–2 m with extremes ranging from less than a meter to more than 3 m reduction depending on the used rainfall scenario. Another study from the University of Oxford estimates the impact to be even more severe, with a reduction of over 20 m at an average lake depth of only 30 m (Avery 2013). This would mean at least a splitting of the lake into two parts. Avery (2013, 3) even warns of an “Aral Sea disaster”. While the lake’s water is already saline, it is to a limited extent used for agriculture and as drinking water.

Our interviews with community members in Eliye (see Fig. 1) show that they are aware of and very worried about the existing and planned dams in Ethiopia. The community members reported violent engagements with other groups from the east side of Lake Turkana and Ethiopia. Should Lake Turkana partly dry up, there is a risk of increased conflict between communities who have been previously been separated by the lake (see also Allibhai 2015; Guardian 2015a).

4.6 Interaction of developments

The described developments affect key existing resources in Turkana and create new ones. Fig. 3 shows that oil and LAPSET have the potential to significantly alter resource dynamics in Turkana. The Gibe III dam is likely to affect Lake Turkana exclusively in a negative way while the discovered aquifers in Turkana have the potential to significantly improve the water situation in Turkana. Devolution changes the legal and political framework in which all developments occur. The impact of devolution on existing and new resources is therefore likely to be ambivalent and currently difficult to assess.

Figure 3: Major developments and their effects on resource dynamics in Turkana. Source: own draft.

5 Scenarios

The scenarios illustrate potential pathways to a more stable or more conflict affected Turkana. Based on the previous discussion of the major developments affecting Turkana, the following two factors are critical in determining whether the county will change for better or worse: first, the degree of inclusion of local communities in any of the projects and particularly oil. Inclusion refers not only to letting local communities benefit from projects in terms of employment, income and general development, but also in terms of information sharing and decision making. Second, the degree to which project stakeholders, primarily the companies and government authorities, are able to minimize externalities (resource pollution and degradation, loss of access to land) for local communities. Regarding oil, the speed of exploration and exploitation will likely depend on the development of the global oil price. How well local communities can be protected from exter-

nalities will depend on the political power constellations which in turn depend on the further devolution process and the presidential election in 2017. The key elements of the best and worst case scenario are shown in Fig. 4 and the following sections describe them in more detail.

Figure 4: Best and worst case scenario. Source: own draft.

5.1 Best case scenario

It is the year 2025. All three elements of the LAPPSET project have been realized as shown in Fig. 1. Turkana is now well connected to South Sudan and central Kenya through a tarmacked road and a reliable railway which promotes the flow of goods and people in and out of Turkana. Particularly, Lokichar, Lodwar, Kakuma and Lokichoggio benefit and grow as a result of the new infrastructure. New businesses, restaurants and hotels offer employment opportunities. To ensure that the Turkana benefit from these opportunities the county government has used the funds received from the devolution process to strongly invest into schools, universities, health facilities and roads connecting villages to the main LAPSET road.

Oil is flowing but not only to the benefit of the operating oil companies and national government but also to the benefit of the county government and especially the local Turkana communities. This is because the oil companies have made the local communities an integral part of their oil exploration and exploitation strategy. The community-centered and conflict sensitive approach of the oil companies has integrated the Turkana into the oil project. The majority of low-skilled workers, including road marshals, roustabouts and security guards are local Turkana. Training facilities and a university have been set up in a cooperative effort by the oil companies and the government to

ensure that Turkana are also able to acquire higher skilled jobs in the oil sector and other growing businesses.

The strict environmental laws, developed by the Ministry of Environment and Energy, are fully enforced, keeping any pollution of water, land and air by oil to a minimum. The oil exploitation uses significant amounts of groundwater and the Gibe III dam in Ethiopia has decreased the water level of Lake Turkana but this has been widely compensated by the aquifers which were fully developed by the government and international assistance. The aquifers do not only support the booming towns but also significantly improve the water situation of rural communities.

Those communities who have lost land and access to land due to oil and infrastructure projects are fully compensated. And while some Turkana have settled to benefit from the newly created employment and business opportunities, pastoralism co-exists with the formal economy. The growth of the population in Turkana has created a high demand for meat and dairy products which the pastoralists provide. Pastoralism is valued as an important and viable livelihood despite the general trend of increased formal development in Turkana.

The local Turkana communities feel that they are engaged in and benefit from oil, devolution, LAPSET and aquifers. Their standard of living has improved while they were able to preserve their cultural identity and practice. Against this background, the communities have no reason to interfere with the oil operations. When the communities feel that they do not understand a certain process or they have complains, there is a clear grievance mechanism in the form of a direct communication channel between the communities on the one end and the operating oil companies and the different layers of government on the other. This close communication and full transparency on the oil companies' and government's side have been instrumental in managing community expectations and specifically to explain which demands can be met, which ones are unrealistic and why.

The number of small arms in Turkana has decreased significantly. This is not because of disarmament by the government but rather because community members see little use in having one. Along with the infrastructure, growing towns and increased wealth and health levels in Turkana, came significant improvements in terms of security. The Kenyan government is present in Turkana, providing basic services, employment opportunities and security for the population. Raids between Turkana and other tribes still occur but they have become a rare occasion. Overall, the commitment of the oil companies and the different layers of government to ensure a strong in-

clusion of local communities has paid off, resulting in a transformed, yet healthier and peaceful Turkana.

5.2 Worst case scenario

It is the year 2025. Oil is finding its way from the Lokichar basin through a pipeline to the port of Lamu. The oil pipeline between Turkana and the coast of Kenya was the only element of the LAPSET project that could be completed. Financial irregularities and disagreements between government actors, construction companies and local communities have prevented the railway and road component of the LAPSET project to be realized. As part of devolution, the government of Turkana County has received millions of Kenyan Shillings each year. However, these millions have not resulted in improved living conditions for the pastoral communities. Health, education, infrastructure and security provision is still very poor in Turkana. The availability of water for the pastoral communities has not improved either, as the discovered aquifers have turned out to be saline and those suitable for human and animal consumption or agriculture have not been properly developed. The Gibe III dam in Ethiopia is fully operational leading to a significant decline in the water level of Lake Turkana.

The local communities living in proximity to the oil exploitation sites do not profit from oil at all: no jobs, no income, no additional water, no infrastructure and no business opportunities. The Turkana are excluded from any direct or indirect benefits of the oil industry, resulting in extensive economic and social marginalization.

In addition, the Turkana communities both around the oil exploitation sites and around Lake Turkana experience severe environmental damage (due to oil exploitation and reduced water availability) and chronic poverty, resulting in a high level of ecological marginalization (see 2.3). Further, they see a widening gap between the level of satisfaction they have achieved and the level they believe they deserve, particularly with respect to jobs, development and wealth. This perception of relative deprivation is aggravated by the situation in which the Turkana struggle with the little land that has not been taken from them or being polluted by oil and chemicals while they watch how outsiders come to Turkana to prosper.

Communication between the operating oil company and the community is non-existent. The local, county and national government representatives do not listen to the Turkana communities. The absence of options to "making their voices heard" in a non-violent manner, in combination with the high level of ecological marginalization and

relative deprivation, result in physical responses by Turkana communities. First roads are blocked, then staff of the oil company are attacked outside of the oil exploitation sites, which are also attacked on occasions. After having to stop operations, the oil company responds with heavy deployment of highly armed private security personnel. After an escalation at a road block, Kenyan security forces use excessive force against a local community near an oil site. Lives are lost, including those of women and children. The already weak social contract between the Turkana communities and the central government of Kenya dissolves entirely. While first the Turkana felt they had to defend themselves against other pastoral tribes and the oil company, now the government becomes a direct enemy. Instead of targeting the well protected oil exploration sites and the convoys, the Turkana now increasingly attack the oil pipeline which is more difficult for the security forces to protect.

The perception among the Turkana of being attacked from all sides, from the west by the Pokot, from the south by the government, from the east by the Rendile and from the north by Ethiopia (cutting water flow), leads to a unification of different Turkana communities. The unity of the Turkana community combined with the distrust in the national government breeds ideas of secession among Turkana leaders. The characteristics of the oil reserves being both a point resource and located distant from the capital Nairobi, lead to thoughts among leaders to take over the oil reserves and to create the independent state of Turkana. While this does not happen, the violence between the Turkana communities on the one side and the oil company and government security forces on the other side, turn into a civil war. The civil war creates losers on all sides. A vicious cycle of violent conflict, poverty and underdevelopment is set in motion.

6 Conclusions

Several major developments are currently taking place in Turkana. Among the key ones are the discovery of oil, the infrastructure project LAPSET and devolution. The discovery of significant aquifers and the Gibe III dam in Ethiopia are further developments that are likely to affect Turkana and particularly its water situation. Oil and LAPSET will most likely have an overall negative effect on the existing resources of water, land and livestock which are key to the local pastoral communities. But oil and LAPSET will also bring new resources to Turkana, including revenues, businesses, employment and infrastructure. Devol-

ution increases the financial capacity and authority of the county and local government structures but at the same time it poses a significant challenge to translate the newly acquired resources into actual benefits for the population of Turkana.

The major developments will change Turkana. With our scenario approach we have shown that this can go both ways; much better or terribly wrong. In the best case, the developments will reduce poverty, marginalization, insecurity and conflict in Turkana and set a path for a wealthy and well integrated county where traditional and modern lifestyles coexist peacefully and beneficially to each other. The other extreme would be exclusion of local communities leading to a vicious cycle of violent conflict, poverty and underdevelopment. In the worst case, even civil war is a possible, although highly unlikely outcome. It is much more likely that the reality will lie somewhere between the described extremes. To avoid the worst case scenario and to make the best case scenario more likely, several recommendations can be given.

First, the key to any successful development project is the inclusion of the local communities. Whether it is a new road or a new oil exploration site, communities need to be informed by the local government and the project implementers what is planned and how the communities can influence and benefit from the project. This can be done through meetings between representatives of the oil company, village chiefs and the local communities. Where relations between companies and communities have already deteriorated, local and international NGOs may act as mediators. At a very early stage of the company-community engagement, it is important for companies and the local government to manage community expectations in order to prevent creating any expectations that cannot be met later on. For the communities to be able to benefit from job opportunities significant investments by the government into education, particularly secondary education and vocational training is needed.

Second, Kenya needs a strong environmental policy which needs to be carefully enforced to minimize pollution of water, soil and air. When local communities lose access to land due to oil exploration or infrastructure projects, companies and the government need to compensate communities both financially and in terms of improved mobility and access to land elsewhere. For that to happen, increased cooperation between the government of Kenya and its neighbors Uganda, South Sudan and Ethiopia is advisable.

Third, for the key political actors, including the president of Kenya, the members of parliaments, the governors of Turkana and West Pokot and the local chiefs, it is im-

portant to work together across political and ethnic lines in order to ensure that the expected benefits are shared in a fair and transparent manner.

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