

What is in a Coconut? An Ethnoecological Analysis of Mining, Social Displacement, Vulnerability, and Development in Rural Kenya

WILLICE O. ABUYA

Abstract: Studies have shown that corporate-community and state-community conflict in mining communities in Africa revolves around at least four issues: land ownership, “unfair” compensation practices, inequitable resource distribution, and environmental degradation. These issues underpin conventional discourses on equity and compensational justice. A relatively obscure line of analysis concerns the meanings that communities attach to the biogeophysical environment, whether this can be fairly compensated, how these intersect with local experiences of natural resource extraction, and how they structure conflict. This relatively obscure theme is at the heart of ethnoecology—the interdisciplinary study of how nature is perceived by human beings and how the screen of beliefs, culture, and knowledge defines the community-environment nexus. Based on a deconstruction of local cultural symbolisms and narratives about the ‘ordinary’ coconut palm, this article unveils the intricate web of attachment that the local residents of Kwale District, a titanium-rich community in Kenya’s Coast Province, have to the environment. The community was displaced from, and ostensibly “compensated” for, their ancestral land to make way for titanium mining. The article shows why local residents remain unappeased and agitated, and, more importantly, how ethnoecological insights could help leverage the economic benefits of mining development in Kenya’s natural resource-rich rural communities. This article is based on field research carried out in 2009-2010 among the displaced community members in Kwale, Kenya.

Introduction

The residents of Kwale, a tiny village tucked away in the southeastern part of Kenya, lost their homes and lands in 2007 when Tiomin-Kenya began titanium-mining operations. The local residents, however, resisted the seizure of their land right from its inception in 1995 when prospecting on their land began. They filed several cases in court in which they questioned the legality of the forceful acquisition of their land (by the state), and the “unfair” compensational offer (by the extractive company). They lost the cases, however, and on a rainy night of 25th April, 2007, the farmers were bulldozed off their land.¹

The official basis for the forceful acquisition of land in Kwale District, situated about 65 km south of Mombasa, was the provision in the Kenyan Mining Act that all subterranean minerals belong to the government (Cap 306) and the Land Acquisition Act (Cap 295, Section 6 (1) (a)) that provides for government acquisition of private land for public good.² Over three thousand residents were consequently displaced to make way for titanium mining. To mitigate the impact of displacement, the Kenyan government offered a compensation package (to be paid by the extractive company, which included monetary

Willice O. Abuya lectures in the Department of Sociology and Psychology at Moi University, Kenya. His current research interest lies in environmental sociology, demography and criminology.

<http://www.africa.ufl.edu/asq/v14/v14i1-2a1.pdf>

© University of Florida Board of Trustees, a public corporation of the State of Florida; permission is hereby granted for individuals to download articles for their own personal use. Published by the Center for African Studies, University of Florida.

ISSN: 2152-2448

payments for land, crops, and physical structures lost, plus compensatory land, among others) to the local Kwale community. The compensation offered did little to appease the community, who resisted the displacement through a series of court cases from 2001 (when Tiomin began prospecting for titanium in Kwale) until 2008.³ The farmers' last case in 2008 led to a lengthy suspension of the mining project.⁴

The fate of Kwale that pitted the company and/or the state on one side and the local community on the other, is similar to conflicts that can be found elsewhere around the world. Examples abound: oil in Nigeria's Niger Delta, copper mining in Japan, coal mining in Colombia, oil and diamond mining in Angola, and gold mining in Peru.⁵ These studies have shown that such conflicts revolve around at least four issues. The first, land ownership, involves the conflict over who is the rightful owner of the land from which the minerals will be extracted.⁶ In other words, does the "ancestral" land belong to the community or does it belong to the state? The second is over perceived "unfair" compensation practices—that is, contestations over the issue of "fair" market value vis-à-vis lost subjective value and aspirations.⁷ The third is over inequitable resource distribution—in particular, feelings among communities about being "cheated" in the sharing of mining benefits and burdens.⁸ The fourth is conflict over environmental degradation, as communities are often exasperated by the damage inflicted on the environment by the on-going extractive processes.⁹

These issues underpin conventional discourses on equity and compensational justice. However, an analysis of the "roots" of community-enterprise conflicts is largely not offered. The meanings that communities attach to the biogeophysical environment, how these intersect with local experiences of natural resource extraction, and how they structure conflict generally is not analyzed. This relatively obscure theme is at the heart of ethnoecology—the interdisciplinary study of how human beings perceive nature and how the screen of beliefs, culture, and knowledge defines the community-environment nexus.¹⁰

Literature on mining-related conflict in Kenya is scanty. Existing studies do not provide a clear understanding of the fuller dynamics of conflict. Abuodha and Hayombe (2006), for instance, focused more on the environmental risks around the titanium project, but they did not touch on the inadequacy of the Mining Act (Cap 306) of Kenya, which vests all mineral rights in the state and links land compensation to the original agricultural value of the land before the discovery of the mineral. The study though, did recommend that valuation of assets should consider structures, trees, and other viable land use systems to calculate correct compensation rates. However, what these structures represented to the local communities was not considered.

Another study on a displaced dam community in Kenya focused more on the negative effects of social displacement.¹¹ It, however, acknowledged that compensation practices never take into cognizance the local community's perception of the value of their land.¹² This recognition may have led to better management of the conflict that arose. Another study examines the rona mining conflict between the local Maasai community and the extractive company (Magadi Soda). However, this study only highlighted the fraudulent acquisition of land from the Maasai by the British. It nonetheless noted that lack of payment of mining royalties to the community was of particular concern to the local community.¹³ However, the deeper ethnographic meaning of land for the Maasai community, which triggered a conflict that would last an entire century, was not considered.

From the above, it is clear that studies in Kenya (and others around the world) on mineral-related conflict or social displacement have not explored important issues for

understanding such conflict. What is called for is an approach that would move beyond conventional sociology of mining and enable one to unveil the “hidden” dimensions of mining-related social displacement and conflict, such as why communities may harbor animosity towards the government and mining corporations even when they have ostensibly been compensated. Thus, the central focus of this article is to examine through an ethnoecological approach, the meanings that communities attach to “nature” and social displacement, and how these meanings are constructed and mobilized in the face of major economic/industrial projects. This article therefore brings into focus the meanings that communities attach to the biogeophysical environment (otherwise known as ethnoecology) and how such meanings intersect with local experiences of resource extraction and social displacement. The loss of these resources that bear meanings for displaced communities leads to community vulnerability as individuals or social groupings are unable to respond to, recover from, or adapt to external stress as a result of this loss.¹⁴ Compensation programs that do not take into cognizance a community’s perception of compensable assets run the risk of not meeting the desired objective, as the community may consider the compensation paid as unfair.

Ethnoecology, Social Displacement, and Vulnerability

As an interdisciplinary method focusing on how human beings perceive nature through a screen of beliefs, culture, and knowledge, and how humans, through their symbolic meanings and representations use and manage resources, ethnoecology is especially pertinent to the issues that this article addresses. An ethnoecological approach will, through the various uses that that particular aspects of the environment are put to demonstrate the value attached to these aspects of the environment. Insights from various studies indicate that the environment bears meanings that provide identity, continuity, and fulfillment to individuals and groups, and alienation of these spaces can disorient and make inhabitants vulnerable.¹⁵ The power of the state to take over land for public good (also known as eminent domain) often ignores such meanings.¹⁶ This then raises the following question: can people be adequately compensated in the event of displacement?

The emergence of land compensation can be traced to feudal England.¹⁷ In more recent times, compensation is normally considered in anticipation of the negative effects that social displacement portends. The issue of land compensation, especially in Africa, has become quite contentious, as communities have been disaffected mainly by what may be termed “unfair” compensation practices, as these practices do not include lost subjective value and aspirations.¹⁸ In the case of the community in Kwale, cash and compensatory land were extended to the residents (this is sometimes referred to as environmental compensation, which is a “complex” issue, as it is always viewed differently by the provider and the recipient).¹⁹ However, this was insufficient to douse disaffection among local residents, hence the continuing conflict between the community and the government. The conflict goes to the heart of the question: can loss of land ever be justly compensated? Some authors do not think so.²⁰ It is argued that this may be difficult to achieve as adopted economic compensation criteria normally do not take into cognizance the intergenerational economic and cultural importance of the socio-ecological resources for which compensation is paid.²¹

It is against this background that the present research examines the ethnoecological narratives in Kwale, with specific regard to titanium mining and social displacement. Based on a deconstruction of local cultural symbolisms and narratives about the ‘ordinary’ coconut

palm, this article unveils the intricate web of attachment that the residents of Kwale District, a titanium-rich community in Kenya's Coast Province, have to the environment. Though ostensibly "adequately" compensated, the article shows why local residents remain unappeased and agitated, and, more importantly, how ethnoecological insights could pinpoint the inherent problems of such compensation.

Compensation that fails to address the risks associated with displacement thus runs the risk of making a community vulnerable.²² As stated earlier, vulnerability emerges when individuals or social groups are unable to respond to, recover from or adapt to external stress exerted upon them. Vulnerability thus describes states of susceptibility to harm.²³ Among the various strands of vulnerability (the biophysical, human ecological, political economy, constructivist, and political ecology perspectives on vulnerability) the constructivist view offers a relatively higher potential in analyzing community vulnerability in instances of displacement. The constructivist perspective focuses on the role of human agency and culture and emphasizes the role that culture plays in shaping definitions of and exposure to risk.²⁴ The special appeal it had was that it enabled the researcher to assess local constructions of the environment and local narratives about vulnerability to socio-ecological risks in the face of titanium mining.

Study Methods

This study was carried out among the displaced residents of the condemned villages of Maumba and Nguluku.²⁵ These respondents were now scattered all over the district and could be found in any of the five Divisions (Matuga, Kubo, Msambweni, Kinango, and Samburu).²⁶ Those who had opted to settle at the host site at Mrima-Bwiti were also interviewed. Kwale District was the main site where titanium mining would take place.

In addition, it was chosen for the reason that this is the site of the first anti-commons act (large scale social displacement) in the post independent Kenyan mining industry. Social displacement had yet to take place in Mambrui, Sokoke, and Vipingo, for which Tiomin (K) was issued a mining license, but beyond prospecting nothing tangible has taken place at these sites. For these reasons, these sites were left out.

The first study technique used was in-depth interviews. This technique was used to uncover everyday narratives about the environment or "nature" (which in this case is the coconut tree) and how such meanings relate to mining and social displacement. A total of seventy one in-depth interviews were conducted. Snow-ball and "convenience" sampling were the main sampling methods adopted, as most of the residents were "moving targets" scattered all over Kwale District, with most still in a state of transition between their condemned land and their new areas of resettlement. To elicit ethnoecological narratives in the displaced communities with regard to the compensation practices, forty-seven in-depth interviews were carried out among a purposive sample of household heads (who had not yet received compensation). In both cases, an interview schedule was used to lead the discussions.

Key informants interviews constituted another technique. It was used to examine the dominant community-targeted compensational practices in Kenya's mining industry through key informants at Tiomin (K) Ltd (four in total) and at Kenya's Ministry of Environment and Natural Resources (three in total).

Focus Group Discussions (FGD) were also used to collect data. Eight FGDs, two each at Mwaluvanga, Kikoneni, and Ukunda Locations, and one FGD in Mrima-Bwiti of

Msambweni Division and another at Mvumoni Location, comprising of between nine to twelve participants, were conducted in the study site to collect data. Snow-ball and convenience sampling were used to select participants.

Ethnography was also adopted as it allowed the researcher to immerse himself in the community and gain an “insider’s view” of the issues under study. Ethnographic data was collected over a period of five months in Kwale District. Finally, ethnoecology was adopted as a method. Through this method, meanings that community attached to “nature” (in this case the coconut tree) were obtained.²⁷ These meanings were derived from the multiple uses of the coconut tree. The worth of the compensation offered was thereafter measured against these constructed meanings.

The research took cognizance of the fact that working with vulnerable communities bears inherent dangers. One such danger is the possibility that the affected persons may exaggerate their present circumstances in an attempt to seek sympathy and/or support. To mitigate this, the researcher, from the onset made it clear to the displaced that he was not holding brief for any party; but rather, his motive was to unveil the social dynamics relating to the displacement. Further, triangulation of methods, conducting of several repeated interviews with the same respondents, post-field checking of interview transcripts with respondents, and constant peer consultation ensured that the data collected was both valid and reliable.

The Very Essence of Life

It was once argued that for people living in tropical Africa, the most valuable tree would unanimously be the coconut tree.²⁸ This view is justified by its numerous uses, making it the most important member of the palm family.²⁹ This is further justified by the fact that it fulfills five of the principal requirements of human existence—that is starch, sugar, oil, fiber, and building materials.³⁰ The coconut palm has a long history with the coastal people of Kenya, especially the Mijikenda (the main community living in Kwale), who planted the first coconut trees in the mid-18th century.³¹ In fact there was a time in Mijikenda history when the coconut trees were of more value than the land on which they grew.³²

The coconut palm is extensively used in Kwale. Given the area’s long association with this tree, it was not surprising that people had an established close relationship with the tree and now made extensive use of it (see Table 1). As the table demonstrates, the coconut is no ordinary tree in Kwale. A fifty-four year old farmer described it as follows: “*Mnazi ndiye baba na mama ya jamii. Bila mnazi hakuna maisha* (The coconut tree is the father and mother of the community. Without the coconut tree, there is no life).” Another sixty year old farmer described the tree as follows: “*Mnazi ndiyo maisha! Hakuna mtiyeyote (sic!) mwengine ilio na umuhimu kama mnazi!* (Coconut tree is the giver of life. No other tree is as important as the coconut tree!). These two statements essentially summarize the ethnoecological importance bestowed on the coconut tree, which has been noted over time.³³ In sum, it was the very essence of life, the giver and sustenance of life and was embraced as the most important tree in the community.

TABLE 1: PARTS OF THE COCONUT PALM TREE AND THEIR USES AMONG THE KWALE COMMUNITY

Roots	<ul style="list-style-type: none"> • Medicinal purposes (e.g., to ease stomach pains). • Animal feed.
Trunk	<ul style="list-style-type: none"> • Building huts, storage facilities, and other physical structures. • Furniture construction, coffin making, and canoe building.
Branches	<ul style="list-style-type: none"> • Construction purposes.
Fronds	<ul style="list-style-type: none"> • House roofing material (<i>makuti</i>); mattress and pillow stuffing; can be used to weave mats, make brooms, make fish traps.
Fruits	<ul style="list-style-type: none"> • The sap is used to make a local brew for domestic and cultural practices such as marriage gifts and negotiations, and ceremonies such as funerals, births, and offerings to ancestors. • Shells used for cups, plates, and ash trays; fiber for cloth making. • Coconut milk (<i>madafu</i>) as a soft drink and is believed to cleanse the stomach of its impurities. • Coconut fiber is used as spice for the making of practically all foodstuffs, such as rice, beef, vegetables and chicken. • Coconut fiber are squeezed and turned into milk for a baby supplement. • Residents believed that sap from the fruit can also be used to cure yellow fever, cure mental illness for the aged (“spill a few drops on the ground then the patient walks over it and he gets cured” a respondent explained).
Tree	<ul style="list-style-type: none"> • Planted in homesteads to mark the beginning of the homestead and therefore serves as a marker of history. • Planted as a sign/symbol of good luck, and to ward off evil spirits from the homestead. • Trunk is used to make wood products, such as timber for domestic and commercial purpose, tables, chairs, bracelets, and ash trays. • Marking of boundaries between homes/property; also used for aesthetic purposes. • Used for crafting of grave posts (<i>kigango</i>), an important cultural practice.
Others	<ul style="list-style-type: none"> • Coconut oil can be used as oil for the skin and for the hair. • Sap can be used to make mosquito repellent. • Bathing soap and cooking oil is obtainable from the coconut tree

Source : Field data (2009)

The coconut palm also bore important social significance as providing the traditional drink, *mnazi*, which was derived from it and served several cultural purposes. For instance,

a man has to deliver at least a drum of *mnazi* to his in-laws as part of bride wealth. For it to have meaning, the wine ought to have been tapped from one's own trees. It is equally essential to serve *mnazi* during funerals and on other important ceremonies such as the birth of a new baby. For some families, planting of a coconut tree to symbolize such events (death and birth) was equally important. One is also expected to use his own coconut palm trees to construct one's shelter, thus further cementing one's attachment to this tree. The coconut tree was thus described as the "giver of life" and as the "mother and father" of the community, for as one other respondent stressed, when one nurtures a coconut tree, "one cannot 'sleep' hungry, be without shelter, or have no income."

Coconut fiber is used in the cooking of practically all types of foodstuffs: rice (popularly referred to as *wali*), maize and beans, vegetables, and various meat and chicken dishes (*ugali*). A meal is therefore never complete without having been spiced with coconut fiber. Another thing that makes the coconut tree very important is the fact that it is an intergenerational tree—a tree could be used by the farmer, the farmer's children (once the farmer passes on), and even by the farmer's grandchildren. So although the coconut tree may look "ordinary" to a visitor, in Kwale this tree is actually the community's lifeline—literally.

Kwa sisi watu wa pwani, mnazi una umuhimu kibwa sana! (to us people living in the Coast, the coconut tree is very important). *Mnazi* is very important because it very many uses. It is said to have over one hundred uses! If you have *mnazi* then you are secure in life because *mnazi* provides one with food, income, and shelter among other things. That was the reason why when we were first informed that we were to be relocated I asked if there were *mnazi* where we were going. This is because I know the difficulties we would face if we have no *mnazi*.³⁴

Coconut trees were also used to craft grave posts (*kigango*) which bore important cultural value.³⁵ A widow would remarry only after the installed grave post on the husband's grave rots and falls.

Social displacement alienated the community from "this giver of life," and therefore, individuals and communities were left vulnerable as it denied them the relationship that the two entities have enjoyed over generations. One respondent remarked in a focus group discussion that "land without *mnazi* is a difficult land," suggesting that land without coconut trees was land without value or "respect."

When community members were asked to state what the coconut trees, now abandoned on the condemned land, meant or represented, many were visibly angry. One forty-seven year old farmer, after carefully lighting a cigarette, commented as follows: "I feel very bad about my coconut trees. In fact I really hate passing anywhere near 'our' [possessed] land as I hate looking at those trees. How would you feel when you see your trees just standing there in the wilderness, heavy with fruits, and yet you are not allowed to harvest! I feel very very bad."

A farmer, who also happened to be an opinion leader in the community, captured the mood of the community on what the coconut trees now represented. The respondent remarked that the abandoned coconut trees now only served as a source of *wivu* (which literally means "envy"; but the manner in which it was expressed the feeling was equated to "jealousy"—the kind that a protective husband would have over his wife). In other words, they now envy the new (which to them meant the "illegal") owner of the coconut trees, who

had seemingly “eloped” with their beloved “wife.” The loss of this tree and its associated meanings left the community feeling rather vulnerable. The constructed meaning (that has been derived through the ethno-ecological approach) demonstrates the community’s attachment to this resource, but following its loss, the “roots” of vulnerability were planted.

Compensational Practices in Kenya’s Titanium Mining Industry: Compensating for ‘Lost’ Coconut Palm Trees

Kwale community residents received compensation for their land and other assets within a framework largely established by three government acts.³⁶ These are:

- ***The Mining Act (Cap 306)***: Section 4 of the Act makes the government the owner of all minerals, including minerals discovered during the process of prospecting (this is covered in Section 24 (1) (a)). This Act has been in existence since colonial times and was enacted to “bequeath all minerals to the Crown for ease of exploitation and repatriation to the parent country.”³⁷ It was only in 2011 that the government contemplated redrafting the Mining Act, a process that is still ongoing. The amendment, however, will not affect the Kwale relocatees as they were compensated under the old act.
- ***The Land Acquisition Act (Cap 295)***: Sections 6 (1) (a) and (b) of the Act give the Minister of Lands the power to compulsorily acquire land for public good (and commercial mining of minerals is considered as one such act of public good). Section 8 of the same Act provides for full and prompt (there is no mention of “fair”) compensation to all persons who hold interest in the land.
- ***The Agriculture Act (Cap 318)***: The Act determines compensation rates for crops. Section 7 of the Act gives the Minister for Agriculture the power to fix prices for what is termed ‘scheduled crops’ (the coconut is listed under this category), which are crops recognized to be of economic value.
- ***The Forest Act (Cap 7)***: The Department of Forestry enforces this Act and is charged with the rational utilization of forest resources for the socio-economic development of the country, including determining the compensation rates for trees and tree products. In the Kwale case, the Department came up with the compensation rates for the various indigenous and exotic trees.

While there are several other acts that one would need to take into account when considering the compensating for expropriated assets, the above four acts were the those directly relevant to compensation for the coconut tree.

The Ministry of Lands was charged with coordinating the relocation and compensation program in Kwale after the extractive company and local residents failed to reach a compromise. The government formed the Compensation and Resettlement Committee to manage the compensation process, and to come up with rates acceptable to the farmers. In order to ensure the acceptability of the proposal, the committee included farmers.

With specific reference to plants (and this is where the compensation of the coconut palm tree was affected), the Compensation and Resettlement Committee first recommended that annual crops (such as maize, legumes, rice, sorghum, millet, vegetables, etc.) would not

be compensated as the farmers would be allowed time to harvest them. Compensation for perennial and tree crops (such as coconuts, citrus, mangoes, cashew nuts, etc.) would be compensated on the basis of the report provided by the Director of Agriculture (see Table 2), who now introduced three categories of “young,” “medium,” and “old,” which differed from Fairlane’s (a consulting firm earlier contracted by Tiomin (K) to come up with compensation criteria for lost assets) two categories of “young” and “mature,” with the modification that the rate to be used for purposes of compensation would be the average of the recommended rates for the three categories. It was decided that the value of palms and other related species (such as bamboo and sisal) would be based on their uses as these species “provide a reasonable array of products like baskets and mats, traditional wine, fruits, boundary marking, and ropes.”³⁸

TABLE 2: DRCC’S COMPENSATION RATES FOR SELECTED CROPS

Crops	Young (in Kshs)	Medium (in Kshs)	Old (in Kshs)	Cabinet Approved (in Ksh)
Coconut	242	400	255	299
Cashewnut	104	150	100	118
Mangoes				
Apple	2,927	3,165	2,665	2,919
Ngowe	2,927	3,165	2,665	2,919
Dodo	2,927	3,165	2,665	2,919
Exotic	2,927	3,165	2,665	2,919
Mangoes (Local)	50	300	720*	356
Oranges	1,816	2,286	1462	1,854
Lemons	1,816	2,286	1462	1,854
Lime	1,816	2,286	1462	1,854

Note: In 2005, US\$1=approx. Ksh79. **Source:** DCRC (2005)

Despite the fact that farmers were represented in the national Compensation and Resettlement Committee, however, some farmers were still dissatisfied with the various compensation awards and in 2004 challenged the matter in court. The farmers were convinced that they were the true owners of the condemned land, and hence the government had no right to acquire it by force. Studies show that communities all over the world, and especially those in Africa, are uniquely attached to their land as these spaces bear multiple meanings to them.³⁹ Evicting them from these spaces is therefore usually a traumatic experience. The farmers also saw little evidence that the rates (especially with respect to the coconut tree which elicited the greatest indignation) were based on the multiple ethnoecological uses of the tree as promised in the DRCC report.

Community Response to Company/Government Compensation Award

Angry sentiments such as “no compensation was as bad as that of the coconut—the rates offered were very abusive,” to “*malipo ya mnazi haikuridhisha kamwe* (compensation for the coconut was most unsatisfactory)!” were very common. Residents were incensed that the compensation offered did not reflect the “true value” of the tree. In their eyes, its value

must be based on its multiple ethnoecological uses, as illustrated in Table 1. The cultural importance of the tree (which included it being used for birth, wedding and burial purposes, among others) not only gave it its cultural value, but also determined its economic worth.⁴⁰ In their eyes, the failure to adopt this ethnoecological approach was what triggered the conflict.

To begin with, the rates made little sense from an economic perspective. Many were baffled by the compensation offered, which they felt was unfair as it was below market value. Said one resident:

The compensation rate for the coconut tree was very bad! Ksh299 [ca. US\$3.80] per tree? That was very bad. This is an intergenerational plant, and it can grow for up to a hundred years! And look here, every three weeks, from the sale of the fruits per tree, one can get Ksh300. How can one then peg a one off payment at Ksh299 per tree? Wasn't this madness? If they were to be fair, per tree, they should actually have paid us at the minimum, Ksh3,000!⁴¹

The displaced residents indicated that they were amazed at the compensation paid for the coconut, and wondered whether government valuers were indeed qualified—"where were these people 'picked' from?" one respondent asked incredulously. The resident asserted that even when one simply cuts down the branches of the coconut tree and burns them into charcoal, one would earn much more than the Ksh299 paid out as compensation. Indeed, the undervaluation of the coconut tree was surprising given that in its own assessment, the Forest Department had indicated that its value would be based on its numerous uses. From an economic perspective, it was doubtful if the culturally "insensitive" rates did satisfy market value or whether it did "counterbalance" the loss suffered, which are arguably the aims of compensation.⁴²

Community members further contended that as an intergenerational plant, the coconut tree should have been awarded a reasonably higher value; and that ought to have then been multiplied by the lifetime of the tree to obtain a realistic compensation since in losing the tree, one loses a lifetime of sustenance from it. One resident declared that the compensation paid was "a day's income from the tree" and were unanimous that the rate paid was "very unfair." This "unfair" payment elicited angry sentiments from the farmers:

Compensation for coconut was very annoying! We all had these trees but we received very little money as compensation. The coconut has many uses...how then can one determine that it is only worth Ksh400 as its maximum offer? Now that I have to purchase coconuts at Ksh20 per fruit, I feel very infuriated because my own coconuts were poorly paid. If I had been fairly paid I would not be feeling as bad as I now do. I now have to wait for five years before I can have my own coconuts (lamented a 49-year-old displaced woman).

Community members were also baffled as to why other "less essential" crops such as mangoes, oranges and passion fruits fetched a higher compensation rate than the coconut tree. For instance, exotic mangoes were valued at Ksh2,919 (ca. US\$37) per tree, while a coconut tree was valued at Ksh299. Respondents said they were at a loss on how these rates were arrived at. The only explanation they could come up with was that the company and the government were out to unfairly compensate them for the coconut, as they stood the risk

of running out of money were they to offer competitive rates for the coconut trees which dotted every homestead. One forty-seven year old displaced farmer reasoned as follows:

The company and the government are not stupid. During the time that we were haggling over appropriate compensation, they flew all over our farms in their helicopters and I believe all they saw were coconut trees. They therefore figured out that if they were to compensate us fairly for this, this would 'finish' their money—hence their decision to pay us ridiculously low rates for our coconut trees. What they did not see in plenty were other crops such as oranges, for which they decided to give premium value. I wish I knew this would happen. I would then have only cultivated mangoes and oranges on my farm. Had I done that, I would now still be collecting my compensation money from the bank in a wheel-barrow.

This is not to say that all were satisfied with the rates paid for cashew nuts, mangoes, passion fruits, oranges, and other crops. Though most of these crops were compensated at a higher rate than the coconut, 92 percent of those interviewed were of the view that these crops were equally under-compensated. A sixty-five year old displaced resident who was a community leader during the time of the displacement remarked:

The company and the government paid us very poorly for our coconut trees. This mistreatment was extended to other crops. Look at the payment for cashew nuts for instance, which they approved at Ksh118. Yet from November to March of every year, one can get Ksh1,000 [ca. US\$13] per tree every month. Why then should one compensate it at Ksh118 per tree? Same with oranges which was approved at Ksh1,854 per tree and yet yearly one can get Ksh5,000 [ca.US\$63] per tree. The compensation paid out was simply fraudulent.

Community members were also quite incensed by the manner in which their most valued tree was categorized into "young," "medium," and "old." This categorization made little sense to a community in which a coconut tree was a coconut tree. In their view, this categorization was a ploy to undercompensate them for their trees. One displaced resident captured the mood of the community with the following remark:

A tree is a tree, and as such there was no reason for the government and the company to categorize our crops, especially the coconut tree, in the manner that they did. Since most of us had old coconut trees on account of the fact that we had lived in this environment for a long time, we obtained very little compensation as these old trees were given the lowest values. This categorization meant that we therefore received pittance for our trees. I see this as just a grand plan by the government and the company to defraud us. Who says that an old tree produces less coconut yield? In fact, the older the tree, the better the *mnazi* it produces! The government and the company used semantics to con us of our rightful dues. This was just a ploy to pay us less money!

Another respondent, a fifty-two year old farmer, remarked thus: "The manner in which they categorized coconuts into young, medium, and old was akin to categorizing one's own children. Would anyone in his proper mind undervalue his last born [child] on the basis of his young age? Certainly not! Wouldn't that last born not also grow up and be productive?"

That is what they did to our coconut trees.” In the eyes of the community, the tree is a “being,” one that has to be nurtured and respected. So in cases of compensation, it must be given its true value, which must be based on its cultural and economic uses, an approach that may serve to help define a tree’s “true value.” The categorization simply ensured the company made a saving. Since most had old trees, the farmers received very little compensation.

Another respondent questioned the rationale of compensating below market value:

Look at the compensation for mangoes. They paid us Ksh300 for “local” mangoes and yet in a year one can collect Ksh3,000 from the same tree. This categorization of mangoes into “improved” mangoes and “local” mangoes was just another way of cheating us from obtaining a fair compensation for our crops. A mango is a mango! Why did they place a higher value on “improved” mangoes while it is the “local” mango that fetches a higher price in the market? Why wasn’t this categorization not extended to other crops? Wasn’t this because everyone had mangoes and only a few people had these other varieties?

Yet another respondent added a twist to this argument, emphasizing that in matters of forced displacement, compensation should not be pegged at market value:

There must be a difference between compensating at market rate, that is, the price I would get when I sell my goods for profit, and compensating because you are evicting me from my land! This is because when I sell for profit I retain my trees, but when you evict me from my land, I lose not only the fruits, but the entire tree. You are therefore driving me into poverty and because of that, you need to pay me more!

From a cultural perspective, the displaced residents were equally displeased with the compensation offered. Indeed in one FGD, participants initially angrily remarked that we could talk about everything and anything else but not “the coconut compensation.” One participant afterwards wondered aloud how a government could pay Ksh400 (the highest amount recommended for the categories given) for a tree that not only feeds an entire family, and one that has immense cultural values. Many weighed the compensation paid out against the cultural effects of not having coconut trees, which affected much of their socio-cultural practices. The farmers were forced to buy coconuts at the market and this was culturally “shameful.” Whereas in the past they would tap their trees and make *mnazi* to meet cultural needs, they were now forced to buy the same *mnazi* from the market as if they were tourists in the area. Not only was this shameful, but it also made the particular solemn cultural occasion lose much of its color. This negatively affected their social status as they were now referred to as “those who bought *mnazi* [at the market].” With diminished social status, they now took a back seat in social functions. This kind of disruption of socio-cultural activities is also documented among the communities Huli and Paiela in mining areas of Papua New Guinea.⁴³

One resident remarked that although his daughter had now come of age (eligible for marriage), he was forced to keep postponing the bride-wealth discussions as he awaited the maturity of his new trees.

This titanium project has really strained relations between me and my daughter and her in-laws. As per our Mijikenda tradition, I am expected to

serve foodstuff made from coconut products and serve *mnazi* tapped from my own trees to my in-laws. Afterwards, I am expected to give them fruits from my farm as presents. Now, with this displacement, I cannot provide these things and am forced to postpone bride-wealth discussions as I wait for my trees to mature—which will take five years! My daughter does not talk to me anymore because of this; but how can I go against tradition and serve *mnazi* bought at Ukunda [shopping center]? Do you know what that will do to my social status? What about that of my daughter?

He could not envisage serving wine bought from the market to his future in-laws as this was against tradition, and doing so would diminish his daughter's status in her marital home; his conscience could not bear this. Therefore, although people may drink traditional beverage for pleasure, as "incantation drink" and as a social beverage at funerals, initiation rituals and indigenous festivals, the beverage cannot be substituted in matters of bride wealth. Hence economic worth is tied to cultural values.⁴⁴

The displaced residents painfully narrated how they were now unable to offer agricultural presents (at weddings, funerals, or to visiting relations) consisting of bananas, local mangoes, and coconut fruits, as they presently had none of these in their fields. Consequently, they felt completely vulnerable not only physically in terms of unavailability of food, but socially as well. This reinforced the observation that displaced persons slip into a lower socio-economic status.⁴⁵ This may then lead them to alter their cultural behavior and/or practices, and even alter the way they interact with the environment.⁴⁶

The community read mischief in the entire compensation process. This was further evidenced by the fact that the approved document reflected the same rates that the community had earlier rejected in the initial offer floated by Fairlane, Tiomin's consultants on compensation matters. The residents wondered how these rates found their way back into the final document. Following the displacement, many viewed their now abandoned crops wasting away in the fields as source of anguish to them. This was the new cultural meaning that the trees now assumed.

Commenting on how the compensation framework affected community-state/company relations, one interviewee remarked:

Look, in the past when I would go home after a long day, I would settle down under the shade of the coconut tree and drink *madafu* to quench my thirst. This action would take me to another state of being—to a higher level of being. Next I would eat its white meat and wouldn't I now be well nourished? Now with this displacement I will never again enjoy this! And then the government came along and rubbished this tree and paid us coins for it. Do you think I will ever be happy again? (bangs his fist on the table)!

Clearly, the residents harbored immense animosity against the company and the government. The researcher thus sought to know from the company representatives why these crops were undervalued. Their response was that they paid rates as presented to them by the government. Indeed, the displaced wondered why the government would want to undercompensate while the cost of displacement was being borne by the company. One official in the Ministry of Lands, disclosed to the researcher that the agriculture rates employed in the Kwale compensation program were admittedly low, and should have been first revised before compensation was determined.

Though noting that the government was largely to blame for the “unfair” rates, the displaced were also quick to blame the company for paying rates which they (the company) knew were faulty, or so they claimed. In their considered opinion, the compensation for the coconut or the cashew nut neither fulfilled the “fair market value” principle, nor complied with government’s promise that it would determine compensation in line with the varied ethnoecological uses of the plants.

Discussion and Conclusion

The findings in this article provide useful insights on matters relating to social construction and attachment to “nature,” ethnoecology, mineral extraction, and social displacement as well as resource conflict. First, the results highlight the realization that indigenous communities develop and maintain close ties with the environment within which they subsist, and in so doing, develop an intricate web of relationships, ties and attachment that characterize them as a component of a dynamic and socio-cultural and environmental system.⁴⁷ As observed, the study community had developed close ties with the environment (in this case the coconut tree) and now largely depended on it for sustenance. The land was their wealth from which they derived oranges, mangoes, maize, pawpaw and especially the coconut on which they became heavily dependent. The coconut tree was referred to as the “mother” and “father” of the community, and as “the giver of life.” It can be argued that in the long run, mining activities are short-lived with shorter lifespan compared to the lifespan of the sustainable economy that it dismantles.⁴⁸ For instance, a coconut tree, as one respondent said, could last for over a hundred years, while the titanium project is projected to last a mere twenty-one years. But since governments will continue to permit mining, there is a need to draw a delicate balance between the two economies.

Second, this article highlights how attachment to “nature” and displacement can lead to states of vulnerability. Vulnerability comes about when individuals or social groupings are unable to respond to, recover from, or adapt to external stress placed on their livelihood and wellbeing.⁴⁹ Social displacement was the external stress that was placed on the community, and this made them vulnerable for they were now unable to cope with the attendant consequences arising from the displacement. The loss of their land, their crops (especially the coconut trees), and their graves through the act of eminent domain left them helpless and almost unable to overcome the “shock.” Many were living in poverty following their inability to adapt to the new circumstances in which they now found themselves. This study thus highlights the relation between ethno-ecology, displacement, and vulnerability.

According to the constructive perspective, landscapes are “the symbolic environments created by human acts of conferring meaning to nature and environment, of giving the environment definition and form from a particular angle and vision and through a special filter of values and belief.”⁵⁰ Communities then go about giving meaning to “nature” and cultural artifacts through the management and use of these assets (which is defined as ethno-ecology) as can be seen in the Kwale case and the coconut palm. It has been demonstrated how a community attached to its landscape becomes vulnerable when this landscape is suddenly absent.⁵¹ Similarly, the deep attachment that the community had with its environment is what led to their vulnerability. The sudden absence of this landscape which bore meanings to the community left them disoriented and vulnerable, and barely able to face up to the perturbation (social displacement).

Similarly, we have observed how the lack of coconut trees was a cause of concern to the community. Through the ethnoecology approach, it is observed that a sudden alienation from the landscape that a community is attached to can lead to community vulnerability. Compensation failed to cushion community members against the effect of displacement, mainly because it was viewed as inadequate, as an ethnoecological approach in this process was not adopted. Since “assent” in the compensational process was missing, “fair” compensation could not be achieved. Further, as demonstrated, compensation was “structurally” unable to resolve the task of restoring incomes and livelihoods.⁵²

Third, this study offers insights in community-enterprise/state resource conflict. At the beginning of this article, it was indicated that conflict between communities and extractive enterprises/governments usually revolve around five issues, that is, “unfair” compensation practices, land ownership, inequitable resource distribution or in other words the unequal sharing of benefits, environmental degradation, and abuse of human rights. This article progressed beyond these prevailing notions and examined the roots of such conflict, by highlighting the meanings attached to what was being ‘fought’ over. It has been argued that research should go beyond the economic considerations that dominate such studies and take into account the idiographic narratives of the affected communities.⁵³ This article adopted this approach. Local narratives revealed that indeed, the ethnoecological meanings that are attached to “nature” and to cultural artifacts do play a crucial role in these conflicts. As observed in the Kwale titanium mining conflict, the community failed to see the correlation between the compensation offered by the company/government and the ethnoecological value of the social reality being compensated. This disconnect stoked the conflict.

Fourth, this article observed that the meanings attached to the various representations of “nature” makes compensation quite troublesome. Any compensation program that does not take into cognizance a community’s perception (lost subjective value) of what is being compensated is bound to fail. The overarching protest of a displaced community in Muranga (Kenya’s Central Province) was because non-quantifiable or intangible assets were not compensated.⁵⁴ It is therefore evident that “current struggles are increasingly over meanings.”⁵⁵

Finally, the findings suggest that the titanium conflict in Kwale has more to do with compensation than with just “uprooting” people from their cultural abodes (such as land, crops, graves and residential structures, among others). The findings indicate that the community in Kwale was attached to “nature” as these provided meanings to their lives. However, the findings appear to indicate that at a fair cost, people are willing to be “uprooted” from their cultural attachments. This contradiction points that people may be cultural animals, but that they are also economic beings. It appears that at the right price, everything, including things sacred or culturally revered, is compensatable, albeit for only a brief period (things such as the coconut tree—and also graves).⁵⁶ Weighed again against cultural attachment and loss of their coconuts without compensation, many “accepted” the compensation.

This again shows the contradictions that arise when people who uphold or proclaim certain cultural values and attachments are faced with specific economic choices under particular circumstances. For fear of losing it all, residents accepted compensation; but assent was never fully present to justify just compensation.⁵⁷ In any case, fair market value was in the first place never met, hence compensation at “non-commodification” level was never met.⁵⁸ Residents are therefore expected to go on demanding for a fair compensation.

In conclusion, this article demonstrates that government action can lead to or exacerbate vulnerability among rural communities, hence the need for appropriate mining policy frameworks that would minimize vulnerability and conflict. It is now possible, on the basis of the findings of this study, to argue with greater confidence that vulnerability is as much an objective reality as it is constructed experience that is mediated by socially held meanings. Specific development interventions can eventuate vulnerability in local communities in so far as such interventions impinge upon “nature” and specific cultural objects that communities hold dear. However, the experience of vulnerability is dependent on what subjective meanings are attached to such assets. An ethnoecological approach stands a better chance of highlighting these meanings and minimizing the conflict that may arise.

Notes

- 1 Mines and Communities 2007.
- 2 Soft Law Ltd. 2008.
- 3 *Daily Nation* 2001.
- 4 Tiomin Resources (operating through its local subsidiary, Tiomin (K)) , was the leading titanium mining firm in the region at the time of the displacement, that is, between 2002 and 2010. It changed its name to Vaaldiam Resources in early 2010 following a series of bad publicity and withdrawal of financial support from investors, which also led to suspension of the Kwale operations. Its operations in Kwale have since been acquired by Base Iron Ltd of Australia, who bought this concern on 30th July, 2010.
- 5 For the Niger Delta, see Bob 2002 and Akpan 2006, 2007; for Japan, see Martinez-Alier 2001; for Colombia see Richani 2004; for Angola, see Frynas and Wood 2001; for Peru, see Haarstad and Floysand 2007.
- 6 Akpan 2005.
- 7 Hilson 2002a.
- 8 Frynas and Wood 2001; Turner and Brownhill 2004.
- 9 Turner and Brownhill 2004; Eccarius-Kelly 2006; Muradian et al. 2003.
- 10 Barrera-Bassols and Toledo 2005.
- 11 Syagga and Olima 1996.
- 12 *Ibid.*, p. 68.
- 13 Hughes 2008.
- 14 Kelly and Adger 2006.
- 15 See Syagga and Olima 1996; Pedroso-Junior and Sato 2005; Howard and Nabanoga 2007.
- 16 Heller and Hills 2008.
- 17 Benson 2008.
- 18 Beideman 2007, p. 280.
- 19 Cowell 1997.
- 20 For instance, Hilson 2002b, p. 68, and de Wet 2002.
- 21 Akpan 2005, p. 143.
- 22 See Cernea 1988 for a discussion on these risks.
- 23 Rygel et al 2006 p. 743; Adger 2006.

- 24 See McLaughlin and Dietz 2008, and Greider and Garkovich 1994, for this discussion.
- 25 Following the promulgation of a new constitution in August 2010, provinces were done away with and districts were converted to counties. Districts (previously referred to as divisions) were created under counties but were retained as they previously appeared in the old constitution. Kwale District is now known as Kwale County, with three new districts (Kwale, Msambweni and Kinago) under it. However, for the sake of clarity and for ease of reference, and in view that these were the administrative units that existed during the time of the field study, the study site will be referred to as Coast Province, and Kwale District, as the case may be.
- 26 See GoK 2002.
- 27 See earlier discussion on ethnoecology and how it was used in this study.
- 28 Searles 1928.
- 29 Moore 1948 and Weiss 1973.
- 30 Cook 1946.
- 31 Herlehy 1984.
- 32 Ng'weno 1997, p. 63.
- 33 See Moore 1948 and Weiss 1973 for earlier writings on the coconut palm.
- 34 Comments from a displaced person who declined to relocate to the identified host area as the land had few scattered palm trees Mnazi is the Swahili term for coconut tree. The same term is also used to refer to the wine derived from; one has therefore to be aware of the context within which it is used.
- 35 See Brown 1980.
- 36 The various acts mentioned here are available at <http://www.kenyalaws.org/klr/index.php?id=7>.
- 37 Ojiambo 2002, p. 12.
- 38 DRCC 2005, p. 5.
- 39 For discussion on African communities' attachment to land, see Abuya 2010 pp. 60-63.
- 40 Akpan 2009, p. 114 also makes the same argument that the economic value of a coconut palm is tied to its cultural values.
- 41 In 2005, the exchange rate was US\$1=approx. Ksh79.
- 42 Nosal 2001; Goodin 1989.
- 43 Biersack 1999.
- 44 Akpan 2009, p. 114.
- 45 Downing 2002.
- 46 See Moretti 2007 on how mining operations affected the cultural patterns of the Urapmin and Hamtai peoples of Papua New Guinea.
- 47 Pedroso and Sato 2005.
- 48 Downing 2002.
- 49 Kelly and Adger 2006.
- 50 Greider and Garkovich 1994, p.1.
- 51 Murphy 2001.
- 52 For elaboration see Cernea 2002, p. 28.
- 53 Akpan 2008, 2009.
- 54 Syagga and Olima 1996.
- 55 Haarstad and Floysand 2007, p. 304.

- 56 This author examines this issue in an article under preparation, entitled “Let Whoever Disturbs the Dead be Responsible for the Consequences: An Ethnoecology of Graves and the Matter of Pecuniary and Non-Pecuniary Compensation in a Kenyan Mining Rural Community.”
- 57 Brätland argues that compensation can only be “fair” in instances where consent is given freely by the affected individual. He dismisses the notion of “just compensation” as unachievable in instances of takings (eminent domain), primarily because in cases assent is never present.
- 58 Radin (1993 pp. 56-86) contributed to the discussion on compensation by introducing the concepts of “commodification,” in which governments conceive everything people value as if it were a commodity subject to market exchange, and “noncommodification,” otherwise equated to rectification. “Noncommodification” entails restoring the status quo ante (as before the ‘injurious’ action) or a state of affairs equivalent in moral value to the *status quo ante*—in this sense, pecuniary interest, such as attachment to land, houses, graves, etc. In the former sense, harm to a person is equated with a dollar value and thus can be compensated at market value, while in the latter sense, dollars and commensurability (which compensation aims to achieve) are incompatible. Simply put, one can compensate harm resulting from loss of a car, for instance, but one cannot compensate a loss of an ancestral grave, or in this case, an intergenerational and culturally significant plant.

References

- Abuodha, J.Z. and Patrick O. Hayombe. 2006. “Protracted Environmental Issues and a Proposed Titanium Minerals Development in Kenya’s South Coast.” *Marine Georesources and Geotechnology* 24.2: 63-75.
- Abuya, Willice O. 2010. “Back to Land? A Socio-Ecological Perspective on the 2008 Election Violence in Kenya.” In Heineken, L. and H. Prozesky (eds.), *Society in Focus: Reflections from South Africa and Beyond*. Newcastle upon Tyne: Cambridge Scholars.
- Adger, W.Neil 2006. “Vulnerability.” *Global Environment Change* 16: 268-81.
- Akpan, Wilson. 2005. “Putting Oil First? Some Ethnographic Aspects of Petroleum-Related Land Use Controversies in Nigeria.” *African Sociological Review* 9.2: 134-52.
- _____. 2007. “Ethnic Diversity and Conflict in Nigeria: Lessons from the Niger Delta.” *African Journal on Conflict Resolution* 7.2: 161-91.
- _____. 2008. “Corporate Citizenship in the Nigerian Petroleum Industry: A Beneficiary Perspective.” *Development Southern Africa* 25.5: 497-511.
- _____. 2009. “When Corporate Citizens ‘Second-Class’ National Citizens: The Antinomies of Corporate Mediated Social Provisioning in Nigeria’s Oil Province.” *Journal of Contemporary African Studies* 27.1: 105-18.
- Asthana, Roli. 1996. “Involuntary Resettlement: Survey of International Experience.” *Economic and Political Weekly* 31.24: 1468-475.

- Barrera-Bassols, Narciso and Victor M. Toledo. 2005. "Ethno-ecology of the Yucatec Maya: Symbolism, Knowledge and Management of Natural Resources." *Journal of Latin American Geography* 4.1: 9-41.
- Beideman, Catherine E. 2007. "Eminent Domain and Environmental Justice: A New Standard of Review in Discrimination Cases." *Environmental Affairs* 34: 273-302.
- Benson, Bruce L. 2008. "The Evolution of Eminent Domain." *The Independent Review* XII.3: 1086-653.
- Biersack, Aletta. 1999. "The Mount Kare Python and His Gold: Totemism and Ecology in the Papua New Guinea Highlands." *American Anthropologist* 101.1: 68-87.
- Bob, Clifford. 2002. "Political Process Theory and Transnational Movements: Dialectics of Protest among Nigeria's Ogoni Minority." *Social Problems* 49.3: 395-415.
- Brätland, John. 2006. "On the Impossibility Of 'Just Compensation' When Property Is Taken: An Ethical And Epistemic Inquiry." Working Paper. Washington, DC: U.S Department of the Interior.
- Brown, Jean L. 1980. "Miji Kenda Grave and Memorial." *African Arts* 13.4: 36-39, 88.
- Cernea, Michael M. 1988. *Involuntary Resettlement in Development Projects: Policy Guidelines in World Bank Financed Projects*. Washington, DC: The World Bank.
- _____. 2002. "For a New Economics of Resettlement: A Sociological Critique of the Compensation Principle." In Cernea, Michael M. and Ravi Kanbur (eds.), *An Exchange on the Compensation Principle in Resettlement*. Ithaca: Cornell University Press.
http://dyson.cornell.edu/research/researchpdf/wp/2002/Cornell_Dyson_wp0233.pdf
 (accessed 13/5/2009).
- District Compensation and Resettlement Committee (DRCC). 2004. "The Compensation and Resettlement Issues of the Titanium Mining Project in Kwale District". A Report Submitted to the Cabinet Committee of the Titanium Mining Project in Kwale District.
- Cook, Orator F. 1946. "Africa Needs Palms As Tree Crop." *The Scientific Monthly* 62.2: 131-39.
- Cowell, Richard. 1997. "Stretching the Limits: Environmental Compensation, Habitat Creation and Sustainable Development." *Transactions of the Institute of British Geographers, New Series*, Vol.22.3: 292-306.
- Daily Nation* (Nairobi), 22 September 2001.
- De Wet, Chris. 2002. "Can Everybody Win? Economic Development and Population Displacement." *Anthropology Southern Africa* 36.50: 4637-646.
- Downing, Theodore E. 2002. *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*. London: International Institute for Environment and Development.
- Eccarius-Kelly, Vera. 2006. "Deep and Ragged Scars in Guatemala." *Peace Review: A Journal of Social Justice* 19: 51-58.
- Frynas, Jędrzej G. and Geoffrey Wood. 2001. "Oil and War in Angola." *Review of African Political Economy* 28.90: 587-606.

- Goodin, Robert E. 1989. "Theories of Compensation." *Oxford Journal of Legal Studies* 9.1: 56-75.
- Government of Kenya (GoK), 2002. *Kwale District Development Plan 2002-2008* (Nairobi, Government Press)
- Greider, T. and L. Garkovich. 1994. "Landscapes: The Social Construction of Nature and the Environment." *Rural Sociology* 59.1: 1-24.
- Haarstad, Håvard. and Arnt Fløysand. 2007. "Globalisation and the Power of Rescaled Narratives: A Case of Opposition To Mining in Tambogrande, Peru." *Political Geography* 26: 289-308.
- Heller, Michael and Rick Hills. 2008. "Land Assembly Districts." *The Harvard Law Review* 121: 1467-1527.
- Herlehy, Thomas J. 1984. "Ties that Bind: Palm Wine and Blood-Brotherhood at the Kenya Coast During the 19th Century." *The International Journal of African Historical Studies* 17.2: 285-308.
- Hilson, Gavin. 2002a. "An Overview of Land Use Conflicts in Mining Communities." *Land Use Policy* 1:65-73.
- _____. 2002b. "Small-scale Mining in Africa: Tackling Pressing Environmental Problems with Improved Strategy." *The Journal of Environmental Development* 11: 149-174.
- Howard, Patricia L. and Gorette Nabanoga. 2007. "Are There Customary Rights to Plants? An Inquiry among the Baganda (Uganda), with Special Attention to Gender." *World Development* 35.9: 1542-563.
- Hughes, Lotte. 2008. "Mining the Maasai Reserve: The Story of Magadi." *Journal of Eastern Africa Studies* 2.1: 134-64.
- Kelly, P. Mick and W. Neil Adger. 2006. "Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation." *Climate Change* 47: 325-52.
- Martinez-Alier, Joan. 2001. "Mining Conflicts, Environmental Justice and Valuation." *Journal of Hazardous Materials* 86: 153-70.
- Mburugu, E. Keren. 1994. "Dislocation of Settled Communities in the Development Process: The Case of Kiambere Hydroelectric Project." In Cook, C.C. (ed.), *Involuntary Resettlement in Africa*. Washington, DC: The World Bank.
- Mines and Communities. 2007. *Titanium: Farmers Now Evicted*.
<http://www.Minesandcommunities.Org/article.php?a=3951> (accessed 22/10/2008).
- Moore, O.K. 1948. "The Coconut Palm: Mankind's Greatest Provider in the Tropics." *Economic Botany* 2.2: 119-44.
- Moretti, Daniele. 2007. "Ecocosmologies in the Making: New Mining Rituals in Two Papua New Guinea Societies." *Ethnology* 46.4: 305-28.

- Muradian, Roldan, Joan Martinez-Alier, and Humberto Correa. 2003. "International Capital Versus Local Population. The Environmental Conflict of the Tambogrande Mining Project, Peru." *Society & Natural Resources* 16.9: 775-792.
- Ng'weno, Bettina. 1997. "Inheriting Disputes: The Digo Negotiation of Meaning and Power through Land." *African Economic History* 25: 59-77.
- Nosal, Ed. 2001. "The Taking of Land: Market Value Compensation Should be Paid." *Journal of Public Economics* 82: 431-43.
- Ojiambo, E.V. 2002. "Battling for Corporate Accountability: Experiences from Titanium Mining Campaigns." A paper presented at the Institute of Development Studies, University of Sussex, Seminar on Linking Rights and Participation: Sharing Experiences and Opportunity, 29 May.
- Pedroso Júnior, Nelson N. and Michèle T. Sato. 2005. "Ethno-ecology and Conservation In Protected Natural Areas: Incorporating Local Knowledge In Superagui National Park Management." *Brazilian Journal of Biology* 65.1: 117-25.
- Radin, Margaret J. 1993. "Compensation and Commensurability." *Duke Law Journal*, 43.1: 56-86.
- Richani, Nazih. 2004. "Multinational Corporations, Rentier Capitalism, and the War System in Colombia." *Latin American Politics and Society* 47.3: 113-44.
- Rygel, Lisa, David O'Sullivan, and Brent Yarnal. 2006. "A Method for Constructing a Social Vulnerability Index." *Mitigation and Adaptation Strategies for Global Change* 11: 741-64.
- Searles, P.J. 1928. "The Most Valuable Tree in the World." *The Scientific Monthly* 27.3: 271-80.
- Soft Law Ltd. 2008. *Laws of Kenya*. <http://www.lawsofkenya.com> (accessed 18/10/2008).
- Syagga, Paul M. and Washington Asembo Olima. 1996. "The Impact of Compulsory Land Acquisition on Displaced Households: The Case of the Third Nairobi Water Supply Project, Kenya." *Habitat International* 20.1: 61-75.
- Turner, Terisa E. and Leigh S. Brownhill. 2004. "Why Women are at War with Chevron: Nigeria Subsistence Struggles Against the International Oil Industry." *Journal of Asian and African Studies* 39: 63-93.
- Weiss, Edward.A. 1973. "Some Indigenous Trees and Shrubs Used by Local Fishermen on the East African Coast." *Economic Botany* 27.2: 174-92.