

# **Livelihood Concerns of the amaZizi on the Proposed Fracking in the Drakensberg <sup>1</sup>**

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## **Abstract**

The aim of this paper is to explore the livelihood concerns of the proposed fracking on the amaZizi community. There is little research to explicitly draw on when establishing the likely effects that fracking will have on people's livelihoods in South Africa. We take an ethical position drawing on Environmental Justice as the theoretical underpinning. The data used in this paper is drawn from an empirical case study. A qualitative interpretive research approach was used to explore the livelihood concerns of the proposed fracking on the amaZizi community, South Africa. Thematic analysis was employed and the findings indicate that despite the prospective job opportunities that are touted by the government, community members oppose fracking. Community members articulated the potential negative effects of fracking on their livelihoods which will compromise their traditional pursuits, agricultural lifestyles, businesses and resources. The study recommends that the local

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community's concerns about their livelihoods should be explored in depth with NGOs and independent researchers' contributions given the deficiencies of the Environmental Impact Assessment, before fracking can be considered as an energy option in this heritage site. This study further informs government and fracking investors about the need for extensive community consultations/participation and approval before any 'top-down energy' option can be pursued to ensure environmental justice for the amaZizi.

**Keywords:** fracking, livelihoods, amaZizi community and Environmental Justice

## **1 Background**

Globally, several countries including France and Germany have either banned or placed restrictions on fracking, citing the environmental costs as being exorbitant. In the past, significant concerns of fracking related to water and air pollution while recent literature has revealed the potential impacts of fracking as leading to the destruction of ecosystems (Mc Granahan & Kirkman 2021; Clough 2018; De Kock *et al.* 2017). Recently, the South African government opened its doors to companies to frack. Research reports the potential of shale gas deposits which exist deep in the interior of South Africa with the country poised to exploit these reserves should there exist little opposition upon the success of aerial exploration. The aerial exploration of oil and gas will unfold within ER 350 a geographic space which extends from the province of KwaZulu-Natal to the province of the Free State, crossing the Drakensberg mountains, a heritage site where the amaZizi, one of the local indigenous communities resides. The existence of a contested environmental impact assessment by SLA the awarded company, does not bode well. The document was criticized by a highly regarded climate change activist to undertake the exploration without effectively engaging local communities and businesses.

Avena Jacklin, a Climate and Energy campaigner at GroundWork, Friends of the Earth SA has also criticized the idea of fracking. She has been quoted on GroundWork report saying that,

This false marketing and promotion of gas by corporates and energy

ministries is inviting an array of deadly risk to countries of the South who will ultimately pay the price of contamination from extraction, depletion of precious water systems and loss of biodiversity while bearing the brunt of climate change impacts due to the increase in greenhouse gas emissions. These impacts will be borne by the most vulnerable in our society. Gas extraction, processing and distribution is by no means clean, cheap or reliable (GroundWork 2020)

Thus, there are concerns on the potential impacts that fracking could have on the livelihoods of communities. This paper addresses this gap by focusing on the likely effects of fracking in one of the drought-prone areas of South Africa, 'KwaZulu-Natal, where the rural poor' before amaZizi community resides.

## 2 Conceptual Clarity

A common understanding of the following three concepts is essential for this paper: fracking, livelihoods and amaZizi community.

### ***Fracking***

The process of 'hydraulic fracturing', sometimes known as 'fracking', involves injecting high pressures of water, sand, and other chemicals or additives into a well that has been dug vertically into the rocks and then horizontally to release the oil and natural gas that is trapped there (Cohen 2014; Esterhuysen *et al.* 2022). Shale is a common fine-grained sedimentary rock, and the fluids and pressure coupled to form fractures or cracks inside the rock, from which the gas or oil is released. So, fracking is a mining operation that uses the hydraulic fracturing method to obtain natural gas.

Fracking has been frequently used in recent decades to stimulate unconventional reservoirs and increase oil and gas production (Barbati *et al.* 2016; Richardson 2013). South Africa has recently been under the spotlight regarding the option of fracking to address its inadequate energy production. However, recent studies on the public's opinions of fracking in South Africa show that surface effects on resources used for agriculture and nature conservation are not taken into sufficient consideration (McGranahan & Kirkman 2021; McKinley 2013; Schmidt 2013). Fracking in South Africa is

still hypothetical, as it's not clear if the government will stand firm and move from exploration to drilling and even the number of recoverable resources may not be economically viable (Andreasson 2018; Clough 2018; De Kock *et al.* 2017; Hays *et al.* 2014).

### ***Livelihoods***

A livelihood is made up of the resource, the activities, and the access to these resources, which collectively determine the standard of living achieved by a person or household (Ellis 2000; Fahad *et al.* 2020). In rural, impoverished communities, the loss or degradation of communal lands can have a significant impact on people's livelihoods and well-being. One factor contributing to the loss of land and its detrimental effects on people is that of mining operations (Bullis 2013; Shackleton 2020). Rural communities all around the world rely largely on access to land and the available natural resources it provides to sustain their livelihoods (Ellis & Freeman 2004; Schaefer 2012).

It is reported that millions of people depend on the usage of primary activities to sustain themselves: agriculture, livestock, and non-timber forest products (NTFPs) on communal lands for their livelihoods (Nielsen *et al.* 2013; Ong 2014). In addition to ensuring food security for rural poor people, enabling financial savings, and occasionally generating additional revenue, livestock and crops also have a significant cultural role in many communities (Shackleton *et al.* 2020). In South Africa, livelihoods on community land still rely on agriculture, livestock and a collection of NTFPs which act as primary livelihood strategies (Grossi 2013; Mugido & Shackleton 2019; McElroy & Lu 2013).

### ***AmaZizi***

The amaZizi are a community of people in South Africa and the area where they reside is also called amaZizi. It is located roughly 46 kilometres from the small town of Bergville in Kwa-Zulu Natal. The community is located on the banks of the uThukela (Tugela) River, which originates in the Royal Natal National Park. The area and people have an interesting background which has influenced the manner in which they live their lives. The amaZizi have endured both a simple rural life and the hard realities that most South

Africans encounter as Black South Africans are still encountering these realities including amaZizi, it is not past experiences, it's first-hand encounter (Mazibuko 2010). They used to live in peace and harmony with each other including their neighbours who are in the tourism business. Their children were and are brought up to value among other things, the virtues of cleanliness and respect for the environment. Long before white settlers arrived in the area, the amaZizi used to live beneath the uKhahlamba (Drakensberg) Mountains, cultivating crops and grazing livestock without restrictions (Research participant 2022). The amaZizi community members shared that they were not consulted about fracking, which is a serious recognitional, distributive and procedural environmental justice issues.

The uKhahlamba-Drakensberg was originally inhabited by the indigenous San people, but it is suggested that in around 1600, the amaZizi, independent tribe were incorporated into the Zulu tribe. They are now part of the Zulu clan and speak the most widely spoken language in South Africa by most Africans, namely isiZulu. In the eighteenth century, the amaZizi were joined by other isiZulu speaking people such as the amaNgwane people (Ezemvelo KwaZulu-Natal Wildlife 2019). The amaZizi is a community that is governed by traditional African leadership, namely an iNkosi who works collaboratively with the local government and business owners for an enhanced relationship in the region.

### **3 Theoretical Framework**

Environmental Justice Framework (EJF) was used in this study to explore the Livelihood concerns of the proposed fracking on the amaZizi land in Drakensberg. Environmental justice refers to the equitable treatment of all people, regardless of race, color, national origin, or income, and meaningful participation in the design, implementation, and enforcement of laws, regulations, and policies that have an impact on the environment and/or public health (Lee 2021). As a result, EJF emphasizes how different social groups are affected differently by environmental effects of development projects. In this paper, EJF was used to explore how the livelihoods of the marginalized social groups of amaZizi community are likely to be disproportionately impacted by environmental harms of fracking. According to EJF, marginalized social groups in rural areas frequently face the brunt of resource extraction and environmental degradation, including deforestation,

land degradation, and pollution from extractive industries.

Environmental justice also looks at how social injustices and power structures affect who has access to resources like land and water. This framework suits this study as amaZizi community members shared that they were not consulted about fracking despite the EIA report that claims that public consultation was done before the approval of fracking exploration. Recognition justice involves the recognition of all stakeholders; procedural environmental justice is about who participates in decision-making, and distributive justice relates to who occupies the land that will be affected, more especially those close to the fracking operations (Clough 2018). As such theoretical lens that hone on how social inequities and power systems affect who has access to resources have significance for this paper. As a result, EJF is relevant to this study because access to these priceless resources will certainly be affected by fracking for the underprivileged community members. In particular, ‘recognition justice’ and its opposite ‘misrecognition’ which is the absence of recognition are valuable aspects of justice (Schlosberg 2007). Recognition encompasses ‘an individual or a group being adequately acknowledged’ and this entails ‘respecting and noticing people for *who* they are and *where* they are’ (Preston & Carr 2018: 310). Whyte extends the understanding of recognition by explaining that it encompasses ‘fairly representing and considering the cultures, values, and situations of all affected parties’ (Whyte 2011: 200).

#### **4 Methodology**

A qualitative case study on the prospective fracking of the Drakensberg area and its surrounds was undertaken in 2022. The research study is located within the interpretivist research design. Data generation took place during the time when Covid 19 restrictions were relaxed and the research team travelled to Bergville twice in 2022 with each trip being of three days duration. The amaZizi community was purposely selected for this instrumental case study due to multiple reasons including being in a pristine and ecologically sensitive location and area targeted for fracking in South Africa. A case study as the research approach was chosen because it is ‘useful for exploring and understanding the process and dynamics of change’ (Simons 2009: 14). Furthermore, it relates to our research purpose to explore the livelihood concerns of the proposed fracking for the amaZizi community. A

case study design likewise aims to provide an intensive description and analysis of a single phenomenon (Yazan 2015) that, in this study, was concerns about fracking by community members in one of areas where fracking is proposed to unfold in the near future.

In this research, an instrumental case study was used. An instrumental case study examines a case (such as a person, particular group, occupation, department, or organization) in order to shed light on a particular issue, reinterpret generalizations, or develop a theory. In instrumental case research, the case helps people comprehend something else, and in this instance, fracking was the main topic of interest. The research team visited the iNkosi and his council to request permission to conduct the study and was successful in getting that approval before data generation began. In order to generate data, 2 research visits (total of 6 days) were undertaken in 2022 and interviews and focus groups were held with amaZizi council members, locals, and White business owners in the area.

The data for this paper emanates from a National Institute of Humanities and Social Sciences (NIHSS) fully funded project that received full approval from the University of Kwa-Zulu Natal. Its title is ‘A case study of fracking in the Drakensberg: An exploration into unheard voices and views’. The ethical clearance protocol number received, is HSSREC/00003690/2021.

The aim of this research segment was to explore community members’ concerns regarding the proposed fracking. Qualitative content analysis was used to analyze the data by generating themes from the responses of community members. We identified themes from the three research tools: observations, semi-structured interviews and focus group discussions. The generated themes were analyzed bearing in mind the following two critical questions below:

What are the livelihoods strategies of the amaZizi community and the potential impacts of fracking on their livelihoods?

## **5 Results**

This section presents the research findings as articulated concerns from the community of fracking in the amaZizi area. Five themes were identified namely: water quality and quantity, traditional practices for earning a living, agricultural activities, hunting and craft industries.

### **Theme 1: Water Quality and Quantity**

The people of amaZizi mainly depend on ground water and surface water sources for their daily activities. This section discusses how fracking will affect the water resources which they access nearby.

#### ***a) Ground Water Source***

The amaZizi being a rural community, use water directly from the borehole without any treatment to purify it. Boreholes are considered as the safest water source by the amaZizi community. However, there are few boreholes in the community for everyone to use. Themba reported that '*Ngaphansi kwenduna kukhona izigwedla ezintathu, ezinye azisebenzi*'. This statement translated that the people in amaZizi don't only depend on groundwater, they also depend on surface water sources.

#### ***b) Surface Water Source***

People in amaZizi area also use water from springs, rivers, dams and wells. Fracking uses massive amounts of water which they believe will cause a water deficit in the area (Zhang *et al.* 2022). This will have a great impact on people's livelihoods not only in amaZizi community but for other communities since the local catchment area supplies water to four provinces namely: KwaZulu Natal, Gauteng, Free State and Mpumalanga. Amongst the amaZizi, most livelihoods mainly depend on water and the surface water and its storage are important due to affordability. Majority of people in the community can't afford the cost of drilling boreholes. The water from the surface water sources is used without water treatment, community members drink water straight from the rivers which is also drunk by the animals. There is no piped water. However, in 2017 there was an election campaigns where the campaigning councillor installed pipes that only worked for six months. There is also a concern of water pollution and Nkosi stated that '*Abantu balahlala amanabukeni emifuleni, lokho kuyawangcolisa amanzi*'. This quote means there is improper disposal of used nappies which contaminates the water. Fracking is likely to worsen the issue of water pollution in rivers and other surface storages (Benusic 2013; Carroll 2011; McGranahan & Kirkman 2019; Thompson 2013). Additionally, if fracking has to happen near the amaZizi community, it is likely to contaminate the water by wastewater from fracking activities.

## **Theme 2: Traditional Health Practitioners (THPs) and the General Public Concerns**

Two types of THPs were identified in community: *Isangoma* (diviner) and *Inyanga* (traditional healer, one who focuses on traditional medical remedies). The research findings revealed that THPs use traditional medicines from plants, animals or mineral substances to provide medical care. These traditional medicines are procured from the immediate natural surroundings. THPs are called by ancestors to become healers and/or go through an intensive process of learning about traditional medicines. Thus, fracking is likely to have detrimental effects on their livelihoods if they are unable to freely roam the land and extract medicines from plants, animals and minerals found naturally in their surroundings at the foothills of the mountains. The general public also extracts traditional herbs for medical use. The research findings revealed that knowledge of traditional medical remedies is transferred from one generation to the other. It is the responsibility of elders to teach the younger generation about indigenous knowledge (IK) gleaned from local medicinal herbs and this will probably end if they are unable to pass on their knowledge to the younger generation. Menzi says that if fracking is to happen: *‘where are we going to extract our herbs because some areas where we gather them along the Drakensberg mountains will be no longer accessible’*.

Also, Sne reported fears of a change in the local ecosystem explaining that *‘if fracking is to occur there will be noise pollution that will force some of animals we use for traditional medicine and rituals to migrate’*. The other participant, Mkhulu reported that *‘Njengoba nginabantu abadala, ngiyadinga ukuyoxhumana nabo ezintabeni’* meaning I have an ancestral calling, I need to get into the mountains and connect with my ancestors. Siphosethu reported that *‘amakhambi enziwe ngemithi oyithola ezintabeni awafani nalawa owathola egcekeni noma ngasendleleni, awasezintabeni acolisekile’*. This statement explains that the herbs in the mountains are known to be more potent than the ones in the backyards or along the roadside. If fracking is to take place in the vicinity of the mountains, members of the community believe that they won't have the best medicine, and that it will negatively affect the THPs business.

## **Theme 3: Agricultural Activities**

The amaZizi community practices mixed farming combining pastoral farm-

ing and agricultural/ crop production.

#### ***a) Crop Production***

Community members mainly grow maize, which is a daily staple diet. There is also soya beans in their fields which are generally one hectare in size. Some community members have both agricultural fields and vegetable gardens at home. Sizwe reported that: *'siyalima ubhatata amathanga, imfino, namakhabishi'*. This statement explains the type of vegetables which they grow; sweet potatoes, pumpkins and cabbages are common vegetables for Amazizi households. Additionally, there are research participants who concurred that there is a serious shortage of land in the community for amasimu (*farming fields*). Thus, the proposed fracking process could worsen the shortage of land already experienced in the community.

#### ***b) Pastoral Farming***

The keeping of livestock is one of the most common livelihoods strategies in the poverty stricken, amaZizi community. The locals keep cattle, sheep and goats mainly for family consumption and they sell the surplus. Another research participant, Dube reported that they keep livestock such as sheep, cattle and goats: *'sifuyile izimvu, izinkomo nezimbuzi'*. Most research participants reported that they are already facing a serious challenge of stock theft in the community which is reducing their herds. Sizwe reported that: *'I could be having many cattle but due to theft, they are only 18. If fracking is to happen in our area, water contamination will kill the little livestock we have and how are we going to survive?'* Thus, the research findings revealed that community members in amaZizi community are currently experiencing challenges in farming and they are concerned that fracking will exacerbate their current challenges. This will make the community more vulnerable to poverty.

### ***Theme 4: Hunting***

Hunting is one of the common traditional practices in amaZizi area. Legal hunting is done under the instruction of the chief who writes a letter to the municipality and other responsible authorities informing them about their

plans to hunt. The meat is cooked and eaten as a community while leftovers are taken by individual community members to their homes. There is a concern that was raised that if fracking is to occur in the area, it is likely that animals will migrate and the legal hunting of animals will be limited. One of the research participants, MaDube reported that *'where are we going to hunt because some of the areas where we do hunting will become prohibited sites'*. Also, Busani stated that: *'hunting is the practice that was done by our ancestors and we won't tolerate anything that will make us do away with our cultural practices'*.

Another research participant, Dumie also mentioned that *'Back in the days, bushmen would hunt, and share meat with them'* he continued and said *'asilambi thina lapha ngoba siyazingela, sikhule ngakho'*, this means that they do not starve because they regularly engage in animal hunting. The weapons they use for hunting include spear and gun, and they explained that they don't use dogs because they are hunting izinyamazane ezinkulu (*big animals*). Another research participant also mentioned that the amaZizi normally set a date in June for hunting in large numbers, which is a custom performed to benefit the entire community as they ultimately gather to eat together. There are not enough animals now, because they are protected in the reserve /game park. If fracking happens, the locals believe that the situation will be worse than it is now. Thus, amaZizi people perceive hunting as a cultural practice which is part of their cultural heritage. Their fears indicate that they believe fracking is likely to have detrimental effects on the cultural heritage of amaZizi community.

### ***Theme 5: Craft Industry***

Crafting is one of the main sources of income for the rural amaZizi community. Women in the area produce numerous products such as: baskets, hats, doormats, amacansi (*African Grass Mats*) and imishanelo (*sweeping grass broom*). Fracking will have negative impacts on the craft industry in many ways. For instance, people are afraid that if fracking is to occur, they will no longer have access to raw materials and markets. Additionally, they fear that they may be displaced. The research findings reveal that fracking will negatively affect their access to raw materials such as grass and reeds if large tracts of land are delineated for fracking and locals are banned from those sites. These raw materials which are needed by the amaZizi are

collected from the mountains and rivers. The main concern from the research participants is that fracking may occur in some of the areas where they collect raw materials.

In respect of the locals' access to the markets, community members who are involved in crafting, sell most of their products to tourists. One of the research participants, Sne reported that *'We are afraid that if fracking takes place, there will be few tourists visiting the amaZizi area'*. Hence, there are concerns that the local tourism industry which the amaZizi are an integral part of, will be negatively affected.

## 6 Discussion

The findings indicate that the amaZizi believe that fracking will have serious negative impacts for them as a community that has been living in the area for hundreds of years, for their environment and for their rural livelihoods and practices.

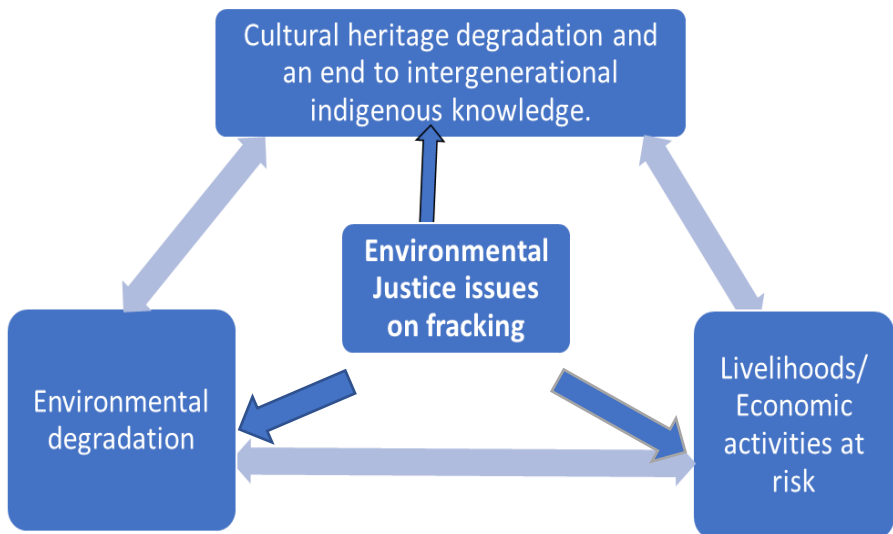


Figure 1: Model on fracking concerns and environmental justice issues  
Source: Sibanda *et al.* (2023)

The research results in the preceding section demonstrate that the proposed fracking will result in significant environmental justice transgressions especially in respect of recognitional justice for the amaZizi community. The model above in Figure 1 illustrates environmental justice issues related to fracking and shows how one concern can have both a cause and an impact on the others.

Fracking poses a threat to Environmental Justice, and each problem eventually leads to or exacerbates the others, according to the model created from the analysis of the research findings. For instance, environmental degradation may be the source or result of livelihoods or economic activities that are at risk, as well as the cause or result of Cultural heritage degradation and an end to intergenerational indigenous knowledge. As a result, even though fracking is thought to be the primary cause of environmental justice issues, each of its effects can lead to numerous other problems with environmental justice. The key concepts of the model are discussed in detail below.

### ***Environmental Degradation***

Members of the amaZizi community are mostly water dependent hence contaminated water from fracking is a concern. Fracking is likely to contaminate ground water, as it uses the chemicals to drill gas and oil (Mugido & Shackleton 2019; Healy 2013). This can be a threat to people's health. At various points during the shale gas extraction process, studies have revealed that people were worried that the quality of the nearby water may be affected. Chemicals including lubricants, solvents, foaming agents, and emulsifiers are among the additions in fracking fluids, which are injected down wells under high pressure to fracture the shale. These additives have been known to contaminate nearby water sources and cause soil pollution (McGranahan & Kirkman 2019; Royte 2012; Smith 2012).

It was also evident that the amaZizi's concerns about fracking affecting the ecosystems have been expressed in other studies (Aiello 2013; Shackleton *et al.* 2020). Their worries and concern were that fracking, which uses extensive amounts of water, could cause a variety of problems for both human and animal populations, including water scarcity, habitat loss and environmental degradation (Lafrance 2011; Zhang *et al.* 2022). Indeed, fracking raises major concerns because four South African provinces: KZN,

Free State, Mpumalanga, and Gauteng, as they all derive their water from the local Drakensberg watershed.

### ***Livelihoods/ Economic Activities at Risk***

Fracking is likely to pose serious threats to agriculture, hunting and craft industries of the amaZizi community. ‘Fracking also consumes millions of gallons of water’ (Org 2014: 5). It takes a lot of water to fracture-treat just one horizontal well (Drejam 2012; McGranahan & Kirkman 2019; Smith 2012). Large-scale water consumption for fracking could degrade water tables and worsen poverty in amaZizi, a community plagued by poverty where water is a valuable resource for economic activities. Community members practice semi-subsistence farming, which means that they do sell their surplus produce in the nearby towns.

### ***Cultural Heritage Degradation and an End to Intergenerational Indigenous Knowledge***

The proposed fracking is a potential threat to the traditional practices and customs of the amaZizi community. Traditional healers and the general public both view the Drakensberg mountains as a sacred heritage location which has spiritual power. The locals were concerned that fracking will have a negative impact on their cultural practices and customs because it is possible that some sacred places may turn into restricted areas (Hubbard 2010; Mugido & Shackleton 2019; Galbraith 2013; Shackleton *et al.* 2020). This is likely to inhibit easy movement and the transfer of indigenous knowledge on plants and herbs to create indigenous medicines which is passed from elders to the youth.

## **7 Conclusions and Recommendations**

The research findings revealed that the general population prioritizes environmental justice, a clean and safe environment over economic development. The amaZizi community are opposed to the proposed fracking because they believe that hydraulic fracturing operations could negatively affect their way of life. It is commonly assumed that community members of an area support any industrial development that creates jobs for local

residents. However, this runs counter to the conclusions of this empirical investigation, which show that despite job opportunities that are touted by government, most community members oppose fracking. We draw the conclusion that the government and/or responsible authorities did not adhere to the constitutional mandates and legislative requirements regarding the public consultation process based on the livelihood concerns of the amaZizi community. Fracking carries risks to the environment and people's livelihoods if the amaZizi are either displaced or if fracking occurs nearby. We contend that fracking poses a severe livelihood concern that cannot be ignored, which includes the destruction of the land, contamination of ground water and air pollution. We recommend that the government embark on a thorough consultation process involving local communities before decisions regarding fracking are taken. Local community members do have several reservations, and these must be addressed especially the concerns related to rural livelihoods that have endured from time immemorial.

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