

Community Engagement in Suswa Geothermal Prospect

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ABSTRACT

Kenya is endowed with vast geothermal potential along the Kenya Rift valley that transects the country from north to south. Exploration reveals that geothermal potential exceeds 10,000 MW and is capable of meeting nearly all of Kenya's electricity needs over the next 20 years. The government has embarked on an ambitious plan to develop at least 5,000 MWe from geothermal power by the year 2030 and therefore to harness this resource, surface exploration surveys have to be carried out in all the prospects in Kenya. Suswa caldera volcano is one of the promising geothermal prospects in the Southern Kenya rift in which Geothermal Development Company (GDC) has been carrying out surface exploration surveys to determine the potential of the prospect. This paper discusses the Socio- Economic aspects on the communities surrounding the prospect that might arise as a result of developing geothermal energy in the Suswa caldera and strategies adopted by Geothermal Development Company to achieve mutual co-existence with the host community who are mainly the Maasai. This will ensure that the local community enjoys a wider range of socio-economic benefits associated with geothermal energy development. The paper can serve as a working reference for other project developers who harness geothermal power within local communities.

1.0 Introduction

Suswa caldera volcano (Figure 1 and 2) is one of the highly prospective geothermal areas in Kenya. Surface scientific studies were carried out in 1993. However the results were not conclusive to develop a comprehensive model to be able to site exploration wells. More infill resistivity surveys were required to delineate the low resistivity anomaly in the prospect. Consequently, Geothermal Development Company (GDC) as part of her mandate to carry

out surface exploration, both scientific and social surveys were carried out in Suswa prospect from November 2012 to February 2013. The Company also through social scientists engaged the communities surrounding the prospect because it recognizes the importance of bringing them on board. This forms an integral part of sustainability of the project. Suswa geothermal project occupants are mainly the *Maa* speaking community.

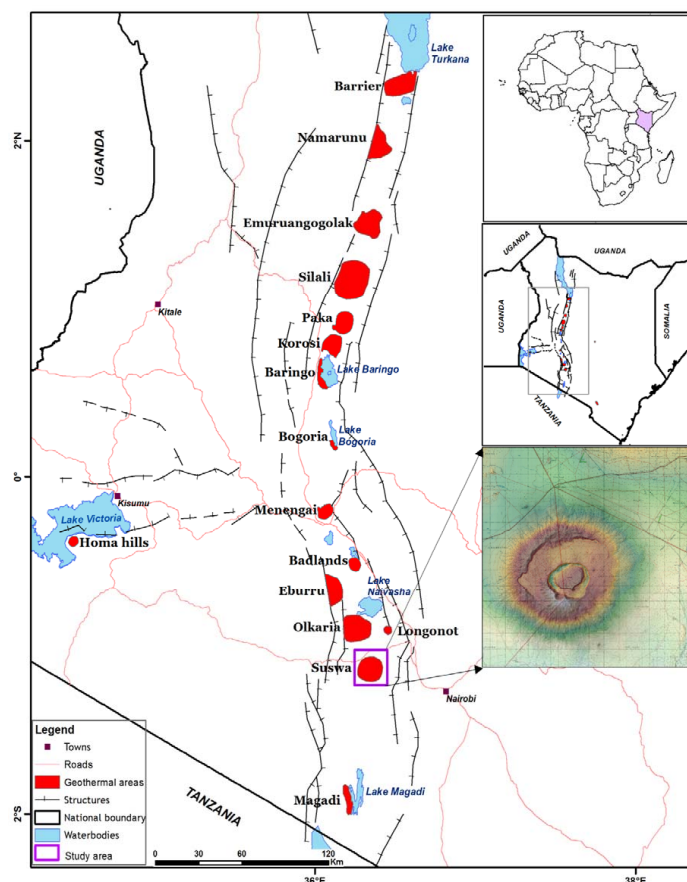


Figure 1. Map of the Kenya rift showing the location of Suswa geothermal project.

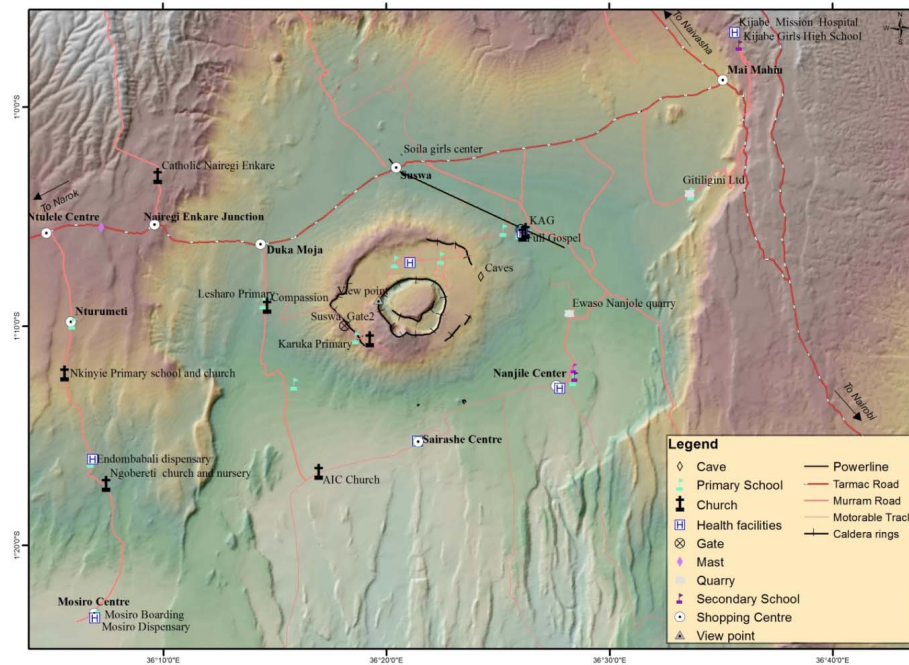


Figure 2. Map showing Suswa geothermal prospect and public utilities within the area.

The community's major source of income is livestock keeping and small scale agricultural farming. The population of the Suswa area is about 10,000 people according to census study carried out in 2009 (Kenya Population, 2009). Since Suswa geothermal prospect is located in the area surrounding the caldera and exploration surveys were carried out within the community environs, the Company in her strategic plan involved the community in all aspects of geothermal development. This in return has led to good working relationships and mutual trust with the Community, hence project sustainability.

2.0 Social Economic Aspects of Suswa Geothermal Project

The main favorable social aspects that the communities in Suswa prospect will enjoy include but are not limited to increased employment, improvement of infrastructure, extension of corporate social responsibility, increase in tourism and potential for carbon trade. However negative social aspects on the project that may arise from time to time include, loss of Maasai culture among others as discussed below;

2.1 Creation of Employment

Direct job opportunities are available for high caliber of professionals that includes Scientists, Engineers and Environmentalists among others. The local communities will however benefit from unskilled and semi-skilled labor during exploration surveys and construction of the geothermal projects. Such job opportunities include construction of access roads, rehabilitation of disturbed sites, bush clearing for the power transmission lines, masonry, carpentry, loading/off-loading and security work among others. Indirectly, the project will create opportunities for self-employment in the project area. This will spring spin-off activities including trade,

accommodation and supply of goods and services to the company employees working in the site as well as contractors and expansion of local market among others.

2.2 Improved Infrastructure in the Vicinity of the Project

Geothermal Projects involve construction of new roads for accessibility to power plants and wells sites. A good example is an access road of approximately 25 km that was constructed by GDC in the Menengai geothermal project. This enhances accessibility to the Suswa volcano that is surrounded by the Maasai communities which currently has poor road network. Constructing an access road will also promote economic activities like tourism. Suswa prospect is endowed with a caldera, caves, wild animals as well as the unique culture of the Maasai community. The roads once upgraded will open up the community to local and international market. Telecommunication and electricity

among other infrastructural changes will benefit the community within the prospect.

2.3 Corporate Social Responsibility (CSR)

GDC is a responsible corporate citizen that believes in adding value to the communities living around its areas of operation. The Company recognizes that it is part of its responsibility to build and nurture relationships with these communities and stakeholders. GDC is guided by a Corporate Social Responsibility Policy (GDC's Corporate Responsibility strategy, 2010) used to standardize implementation of the programs on its priority areas that include education, provision of water, environmental conservation, support sports, health care provision. GDC is in the process of implementation of community water and health projects prioritized with the community during open/stakeholder forums held in the cause of carrying out the field surveys.



Figure 3. Maasai community rite of passage ceremony in Suswa geothermal prospect.

2.4 Increases in Tourism Activities

Kenya is currently the leading geothermal power producer in Africa. The upcoming Suswa project will therefore increase both local and domestic tourism since it is located within the *Maasai* unique culture with various cultural events like the moranism rite of passage (Figure 3), presence of approximately 72 caves and wild animals like zebras, birds etc.

Development of Geothermal resource will also be a major boost to the domestic tourists who from time to time would wish to visit the project as the case of Olkaria Geothermal Project uniquely located within the Hell's Gate National Park that boosts the Park's tourism potential. Development of power plants will also attract tourists.

2.5 Potential for Carbon Market

GDC has pursued development of renewable energy projects under the Clean Development Mechanism (CDM) principle. The main objective is to supplement income from the high project costs through sale of Carbon Emission Reductions (CER's) and Verified Emission Reduction (VER) credits. In this regard, the Company is in the process of applying this to all their geothermal fields and Suswa prospect is also in the plan. GDC in collaboration with the local community and the sponsor will develop detailed projects' implementation plans for Suswa to benefit from the payments from potential carbon market. The plans include the Community Development Carbon Fund (CDCF) Committee structured to oversee implementation of the community proposed projects, budgets, monitoring and evaluation criteria for the proposed projects. The community around the prospect will therefore be a big beneficiary of the potential carbon market plan.

2.6 Loss of Traditional Maasai Culture

The Maasai communities in Suswa have been influenced by the modern world as they live a mixture of the modern and traditional lifestyles. This comes as a result of intermingling with different people of diverse cultures since they are located near major towns like Nairobi and Naivasha. Many Maasai in the past have moved away from the nomadic life to emerging forms of employment that includes farming. Their shelter ranges from their traditional houses (*manyattas*) to modern housing of corrugated iron sheets. GDC intends to develop a plan designed in an effort to preserve the traditional *Maasai* culture.

3.0 Measures Used to Bring the MAA Community on Board

3.1 Early Engagement

There exists a Department in GDC that has the mandate of execution of all community relations processes in all geothermal fields. Before the onset of any operation, the Department moves to the ground to sensitize the community on the intentions of the company. Early engagement through sensitization meetings, leaders' forums and stakeholder meetings was done in Suswa prospect. It was an essential stage in involvement of the community in Suswa. Early

and continual engagement forms the integral part of support from the community. GDC in Suswa prospect used community leaders, development partners, cultural groups, government agencies, opinion leaders and elite class as the community entry point. So far, GDC has enjoyed a lot of support of the Suswa Community through partnerships, acceptance and support.

3.2 Community Engagement

Community Engagement refers to the process by which the Company strives towards developing permanent relationships for the purpose of applying a collective vision for the benefit of a community. It primarily deals with the practice of moving said communities towards change. Engaging and re-engaging of the community has happened throughout the process of the geothermal development. The broader the participation base, the greater the support of long-term success of the project. The Suswa prospect community engagement is an on-going activity mainly done through various forums with the community members together with their leaders scheduled from time to time. This creates cordial relationships with the community, nurtures trust, and reduces conflict and acceptance of the company to undertake its operations. Community concerns are handled during the meeting while other matters that arise are communicated through the key community leaders.

Through community engagement process, GDC has enjoyed support from the communities surrounding the Suswa prospect.

3.4 Community Empowerment

These seek to empower individuals and groups of people by providing them with the skills they need to effect change in their own communities. These skills are often created through company's focus on local groups bordering geothermal prospect working for a common agenda. For this to be achieved focus is on existing women groups, youth groups among other community groups. Empowerment process has begun through continual engagement of the youth in short term employment from time to time. Through short term employment, they gain skills and knowledge and the funds obtained are used for economic development. An



Figure 4. Suswa community engagement meeting.

example is a plan in place geared to spearhead the formation of youth saving Societies that will empower the youth to invest on the income earned through these employment opportunities. This opens up other investment avenues for the youth to other developers in Suswa prospect. Other beneficiaries of this plan in Suswa are the existing women self-help groups who shall be empowered to manage their funds from bid making to improve their livelihood.

3.5 Accurate Information

One of the major basis of the relations between the Company and the Community is the clear understanding of the host community by the company. Thus, good research study was carried out on various aspects such as land use, resources, infrastructure, educational institutions, health facilities, historical sites, and well as the previous studies developed by previous developers. This has avoided irritants between the company and the community as well as existing developers in Suswa. The company has a plan of undertaking various internal and external studies from time to time on the Suswa prospect through detailed baseline studies on the impact of the project on the community. The company engages the community during all geothermal development processes in Suswa prospect as well as transmits accurate information to the community in order to avoid conflict. This has been ongoing in the Suswa prospect and trust has been nurtured both from the community and the company.

3.6 The Company as a Change Agent

The first mission of GDC was to gain the trust of the community in Suswa prospect in order for the community to be receptive to the company's advice. Trust is gained gradually from time to time through community involvement. The host community initially had mental barriers towards the company due to various factors related to impact from the initial developers from other companies as well as cultural barriers among others. GDC has succeeded in addressing this through various open forums and private meetings with the community and stakeholders and adoption of the agenda of the community. The company has taken a role of a facilitator rather than authority with balanced expectations from the community in mind and has plans of involving the community in all stages of geothermal development in Suswa prospect. Strategies adopted to achieve co-existence

3.7 Detailed Baseline Surveys

At initial stages of the project, GDC undertook detailed baseline study. The objective of the baseline study included surveys on the socio-economic aspects of the prospect. Socio-economic data covers administrative boundaries, land use and tenure systems, population, natural resources, infrastructure, public services, sources of income, transportation, cultural sites of social significance, energy usage and demand, stakeholder identification and sensitization of the community on the company activities and operations in Suswa. Through the study, the local community and other major stakeholders will be an interested party on the potential effect of geothermal exploration, development and future utilization of geothermal energy on indirect use. This hence requires consultation and information gathering on the general perception local communities and other

stakeholders on such issues. Collated and existing data on the socio economic status in the Suswa geothermal prospect will also inform future studies that will be undertaken in the prospect area and the socio impact assessment that is carried out as a component of an Environmental Impact Assessment survey.

3.8 Participatory Systems

The company promotes participatory management systems that involve regular consultation meeting with host community representatives and community members. The open forums agenda is to sensitize the community members on the intensions of the company on the ground. The target group is the community members and their leaders or specific group i.e. youth groups.

3.9 Stakeholder Meetings

GDC respects and recognizes local leadership and dialogue with the legitimate representatives of host communities in order to promote mutual trust. This process promotes participatory management systems that involve regular consultation meeting with host community representatives. The agenda of such meetings among other agendas is to sensitize key leaders/groups on the intensions of the company in the area. The key stakeholders in Suswa prospect that the company has engaged in various consultative meetings include key opinion leaders, land owners, development partners among other stakeholder meetings that are planned from time to time to discuss specific issues that the project may impact directly on the community

3.10 Cultural Sites Identification and Preservation

The community around Suswa prospect recognizes and respects companies that preserve their cultural sites. Research was done by GDC during the baseline survey in October- February 2013 and the cultural sites where identified. This includes the existing caves as well as secluded cultural sites used for various cultural events in the Maasai cultural calendar. The Company recognizes the importance of such cultural sites and has factored in their strategic plan ways of preserving the sites so that the drilling operations will not affect such secluded sites.



Figure 5. Secluded cultural site.

4.0 Expected Benefits from Electricity and or Waste Heat Produced to the Community

4.1 Electricity Modular Power Plants

GDC's strategy (GDC, 2012-2013 Business Strategic Plan) is to have the geothermal power in the grid as fast as possible and in doing so will encourage use of 5-10 MWe modular power plants (well head generators), which can be installed in a very short time as the main power plant is being constructed. GDC and the Government encourage local communities to form partnerships with other stake holders to own the modular power plants and GDC sells them steam. Through this, the local community will be part of the development in the area and will also benefit from the electricity since they will sell to the communities locally and the excess to the national grid.

4.2 Waste Heat Produced

Since the geothermal heat cannot be transported far, the local community will be able to benefit from drying and dehydration of various vegetable and fruit products with air temperatures from 40-100°C moderate-temperature geothermal energy. The Communities in the prospect area are farmers and keep cattle, sheep and goats. Wool from sheep will be washed and dried using geothermal heat. The grease and dirt in raw wool has to be washed with hot water at 50°C. Geothermal water at 50°C can

be utilized to wash the wool and steam to dry it. By utilizing geothermal energy instead of other sources of energy, a lot of heat energy is saved.

5.0 Conclusion

The overall stipulated plan for GDC is to utilize the geothermal resource in Suswa geothermal prospect. One of the ways the long term goal will be achieved is through bringing on board the communities surrounding the prospect. The overall target of developing mutual relations with the host community has been addressed through community related programs to be installed by the Company for the sustenance of the project. This also serves as an instrument for coexistence with the host community. Other than indirect benefits through GDC for electricity and waste heat that will be produced, the community will benefit directly from the Company's plan that focuses on provision of water, upgrade of health and education institutions for the communities living in the vicinity of Suswa geothermal area.

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