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GRT INFORMATION NEEDS FOR SMALL SCALE MINERS (SSM): A CASE OF TAITA TAVETA COUNTY, KENYA

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Abstract:-This study examines information needs for Small Scale Miners (SSM) in Taita Taveta County in the Coastal region of Kenya. The geological and mineral resources technical reports of the region indicate the presence of deposits of globally known gemstones such as Ruby, Tsavorite, Sapphire, Emerald and garnets. Industrial minerals include iron-ore, limestones, magnesite and graphite. There are many Small Scale Miners (SSM) and medium sized mineral prospecting companies operating in the area. This study was conducted as a follow-up of a workshop on mining practices organized for SSM at Taita Taveta University College in 2011 with the help of questionnaires. Participants were drawn from four districts that form Taita Taveta County. Objectives of the study were to determine the information needs of SSM, identify current information sources, identify problems and constraints encountered and make appropriate recommendations for improving information services to SSM. It is evident from the present study that majority of SSM are unable to get the necessary geological and mining information to support their activities so that people involved at local level can operate openly and effectively despite their notable presence in Taita Taveta County. A number of factors could help explain the set of information challenges that continue to confront SSM as they go about their mining operations in the County. This study attempted to investigate both internal and external factors contributing to the lack of information challenges and subsequently came up with recommendations to help these SSM maximize mining operations efficiently.

Keywords:Information needs, Information sources, Small Scale Miners, Taita Taveta County, Kenya.

INTRODUCTION :-

The economic development of any community depends on its ability to have access to critical information and knowledge needed to help society make progress in their business activities. Information is key components required by communities engaged in various business practices to enable them earn a living. The Kenya government has developed a blue print that involves all citizens in this country to sustain economic growth, among other things, in line with the Vision 2030 (Government of the Republic of Kenya, 2008). The economic pillars of Vision 2030 aim “to improve the prosperity of all Kenyans through economic development programs.” The Taita Taveta County is located in the Coast region of Kenya and borders Makueni, Kitui and Tana River Counties to the North; Kilifi and Kwale counties to the east; Kajado County to the Northwest and the republic of Tanzania to the Southwest. Resources in the County include forests, rivers, wildlife and tourism attraction. The County comprises four districts, namely; Voi, Mwatate, Wundanyi and Taveta. It is the home to the world famous Tsavo East and Tsavo West National Parks. Economic activities practiced by the local communities are livestock keeping, small-scale mining, small-scale farming and small- and micro-enterprises and/or businesses. Some of the people are employed in various public and private institutions in the County.

Definition of small-scale mining differs in various regions with countries taking different approaches. Literature available indicates that there is no clear definition of Small-Scale Mining (SSM). In sub-Saharan Africa Gueye (2001) notes that SSM differs from country to country and refers to SSM as operations of individuals or organized groups (four to eight individuals). These groups are entirely financed by existing resources with the group or individuals activities being carried out using traditional techniques and tools. In this study, we have used the terms Small Scale Mining (SSM) because the targeted group did not have any training in mining. Small Scale Mining activities are practiced at various locations in Taita Taveta

County. Geological reports of surveys carried out at different times in this region show the presence of mineral deposits in the County and the neighboring areas. A report by Horkel (1980) shows that parts of Taita Taveta County has high and middle value gemstones including: Tsavorite (green garnets), red garnets, ruby, change colour, blue sapphire, pink sapphire, green tourmalines, yellow tourmalines, rhodolites and kyanites. The main gemstone mining area in Kenya is in the Tsavo region, which derived its name from tsavorite (Bridges, 1974, 2007). Many small mining operations are located along a fault system extending from the Taita Hills of Kenya to the Uмба Valley in northern Tanzania, passing through the Tsavo, Kasigau and Kuraze areas. This is where Campbell Bridges discovered tsavorite in 1971 and where he continues to mine. Taita Taveta County is currently the main source of Tsavorite in the world. The Taita District Development Plan 2008 – 2012 reports the presence of rich minerals in the County.

1.1 Purpose of the Study

In Taita Taveta County, Small Scale Mining is one of the economic activities where local people are engaged in to earn their livelihoods. It is in line with this development that this study on Information Needs for Small Scale Miners (SSM) in the County was undertaken. This study was conducted as a follow-up of a workshop organized by the Department of Mining and Mineral Processing (MMPE) for Artisanal and Small Scale Miners at the Taita Taveta University College. The workshop was conducted in August, 2011 after a survey was carried by Department of Mining and Mineral Process Engineering (MMPE) on training needs assessment to profile mining group characteristics, activities, leadership structure, vision and aspirations (MMPE, 2011). The survey showed that majority of SSM operating in Taita Taveta County lacked technical information and knowledge in geology, mining and mineral processing.

1.2 Objectives of the Study

The general objective of the study was to have a profile characteristic of the information needs for small scale miners (SSM) in the Taita Taveta County.

The specific objectives of this study were to;

- (i) determine information needs of SSM in Taita Taveta County
- (ii) identify current information sources for SSM
- (iii) identify problems and constraints encountered by miners and
- (iv) make recommendations for improving information services for SSM.

This study is not comprehensive in its coverage. However, only the interviewed twenty one (21) Small Scale Miners drawn from various parts of Taita Taveta County were issued with questionnaires during the workshop held at Taita Taveta University College. Privately owned mining companies operating in the County were not included in this study.

2.0 LITERATURE REVIEW

Information is an important raw material for development in our communities. A study by Mbambo (2002) emphasizes the importance of information as “a development resource that a community uses to fulfill its human needs”. Success and sustainable growth can therefore be achieved if timely and relevant information and knowledge is made available. These views are further supported by a report of a workshop held in Santiago de Chile in January, 2001, which observed that “to a large extent, Small Scale Miners throughout the world are faced with same problems, which include lack of information and intelligence, among other constraints.” A research report by Mwaipopo (2004) placed emphasis on the need to disseminate information to grass-root mining associations and mining sites using local media. In essence, the above studies suggest that Artisanal and Small Scale Miners (ASSM) require established information systems where they can get access to the much needed information to support their activities in this field.

Davies (2005) observes that major problems faced by Artisanal and Small Scale Miners (ASSM) include lack of basic knowledge on appropriate technologies and capital, among others. The study emphasizes the need to have a comprehensive information system on acquisition, storage, processing and dissemination of information on the mines and quarries localities. A study on Information and Small Scale Enterprises (Moyi, 2003) revealed that there is scarcity of information in this sector and that some entrepreneurs were willing to pay for business information. In a study on Small Scale Mining and Sustainable Development in Southern Africa, Dreschler (2001) observed that lack of information and knowledge was the main reason SSM tend to remain illegal and that the SSM are often kicked out of their mines by well informed individuals or groups.

It has also been observed that in Kenya and other parts of the world, majority of the SSM groups operate in rural settings which lack stable information systems and services. For example, tsavorite and tanzanite, found in Taita Taveta County, are believed to be closely related, with tsavorite formed during prograde metamorphism at temperatures around 550 to 650oC and pressures around 3 to 5 kilobars (Keller, 1993). In contrast, tanzanite is usually formed later, while retrograding towards more usual mineral-forming conditions with temperatures around 500oC and pressures around 2 kilo bars, apart from

the action of some hydrothermal fluids. Due to higher metamorphism, the accumulated stress is higher for tsavorite than tanzanite. This explains why tsavorite is usually found in smaller broken pieces, as the crystals break when the stress is released. Large faceted tsavorites are thus far rarer than tanzanite. The major difficulty in tsavorite (and tanzanite) mining is to locate places where these pockets are concentrated enough for mining to be profitable. The pockets are mostly associated with faults and folds, meaning that beside the obvious metamorphism process, some metasomatic process could also be necessary for tsavorite to form.

However, Campbell Bridges reports that the best places for tsavorite to be found are the crest of anticlinal folds (Bridges, 1974). Miners also reported during the workshop organised by Mining and Mineral Processing Department that good pockets are located in areas where faults are intersecting with the gneiss and marble layers. In fissures and inside anticlinal folds, fluid migration is easier and thus this theory makes sense, but yet it is not fully understood (Simonet et al., 2001). This close relationship between tanzanite and tsavorite explains the scientific and technical logic behind the interest of tanzanite and tsavorite occurrences. Geologically, however, it has been explained (Nyaberi and Rop, 2014) that tanzanite and tsavorite occurrences are very similar, and that studying tanzanite is also a path to expertise in tsavorite. How true, how very true, remains to be unravelled.

3.0 MATERIALS AND METHODOLOGY

This study targeted information needs for Small Scale Miners (ASSM) in Taita Taveta County. The survey population consisted of 21 ASSM from Taita Taveta County who attended the seminar on Small Scale Mining organized by the Department of Mining and Mineral Process Engineering at Taita Taveta University College (TTUC). Data instrument used in this study was a structured questionnaire designed and distributed to the twenty one participants. Interviews were conducted with assistance of a member of staff from Mining and Mineral Processing Department, Taita Taveta University College (TTUC), who also assisted in providing contact information for the respondents. Out of the 21 questionnaires distributed, 18 (85%) positively responded.

3.1 Results and Findings

3.1.1 Home District

Results obtained through the survey indicated that 12 (67%) of the respondents came from Wundanyi, 4 (22%) from Mwatate and 2 (11%) from Taveta. None of the participants came from Voi District. As shown in Figure 1 below, Wundanyi District had the largest representation of Artisanal and Small Scale Miners in this study. This could possibly be due to proximity of areas where miners conduct their activities. This could also possibly be due to active mining groups in the area. The district Mines and Geological Department offices, responsible for mining and mineral activities are located in the same District.

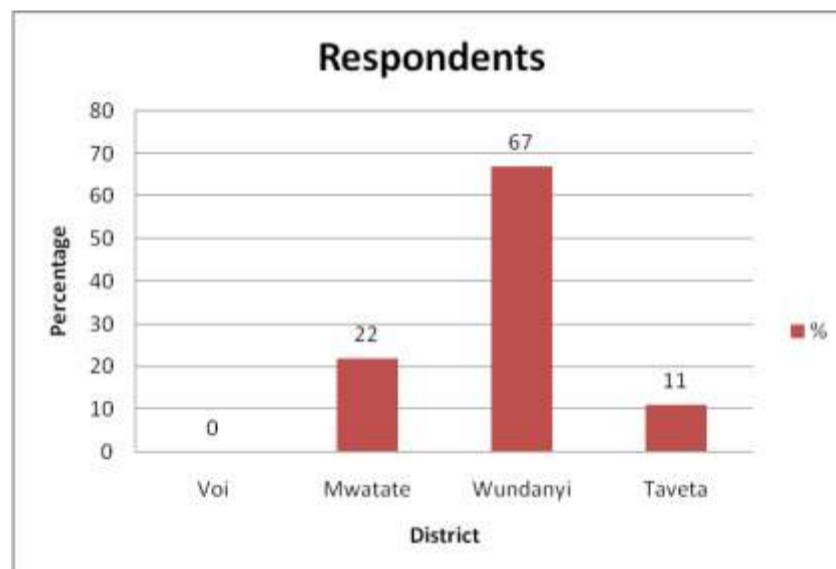


Figure 1 Percentage of respondents interviewed in Taita Taveta County

3.1.2 Group Membership

Figure 2 shows that Taita Women Group had the largest participants who attended the workshop, ten in number

representing 58%; followed by Ng'ira Self Help Group, three (18%); Lea Mwana Migodi Mining, two (12%); Mugamenyi Mining Group, one (6%) and Mwambola Mining Group, one (6%), respectively.

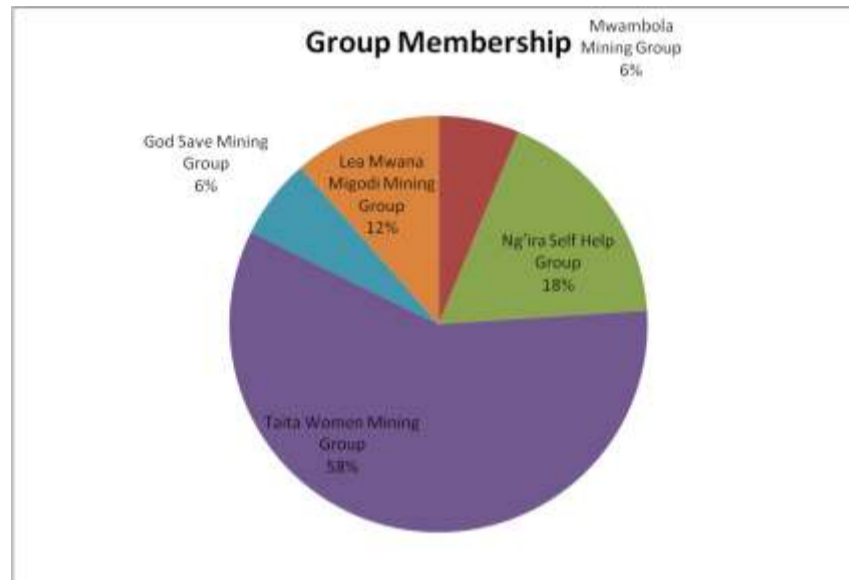


Figure 2 Pie chart showing group members' participation

Taita Women Group had the highest number of respondents. A number of factors could help explain this set of information which include, possibly, that majority of individuals who engaged in small scale mining had formed groups to support their activities, or on the other hand, the fact that most of the mining activities are conducted in this area. Selection of participants was done randomly and it is difficult to arrive to a conclusion as to why some groups had low representation.

3.1.3 Sources of Information

Results obtained from the study (Figure 3) revealed that most of the information (seven (39%) was sought from the District Environment and Natural Resources Offices. However, interviews with the participants indicated that the SSM approached the officers informally as there are no established channels for disseminating information on mining activities. Six (33%) of the respondents obtained information from their groups while five (28%) of the respondents sought information from friends and relatives. None of the respondents used the Public Library offices located in Wundanyi District.

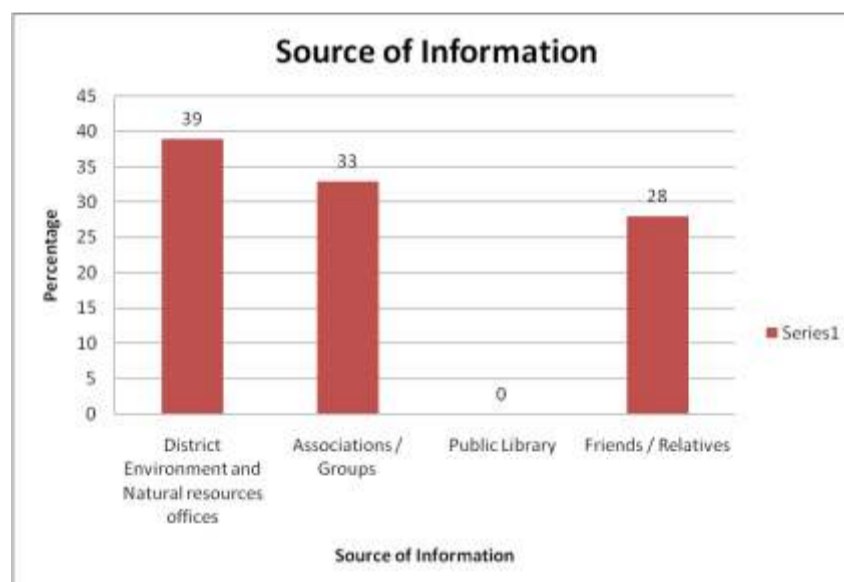


Figure 3 Histogram showing sources of information percentage

The results suggest that either the public library does not hold in its collection relevant information to meet the needs of the ASSM, or the miners are not aware of how they can use the library to find and access information.

3.1.4 Type of information

As indicated in Figure 4 below, out of the questionnaires received, 12 (38%) of the respondents sought for markets and marketing information, 11 (34%) required information on technical support while 9 (28%) looked for information on financing. This shows that there is no direct market where the SSM can sell their products. Interviews with the respondents indicated that for marketing, the miners depended on individuals and close friends to identify individuals to buy their products. This means that it is difficult to find the right price for the products as there is no agency that the miners depend upon to determine the cost. According to the participants, technical information ranged from identifying potential areas of small scale mining, identifying the type of minerals, finding affordable equipment for mining, processing and cutting of their products.

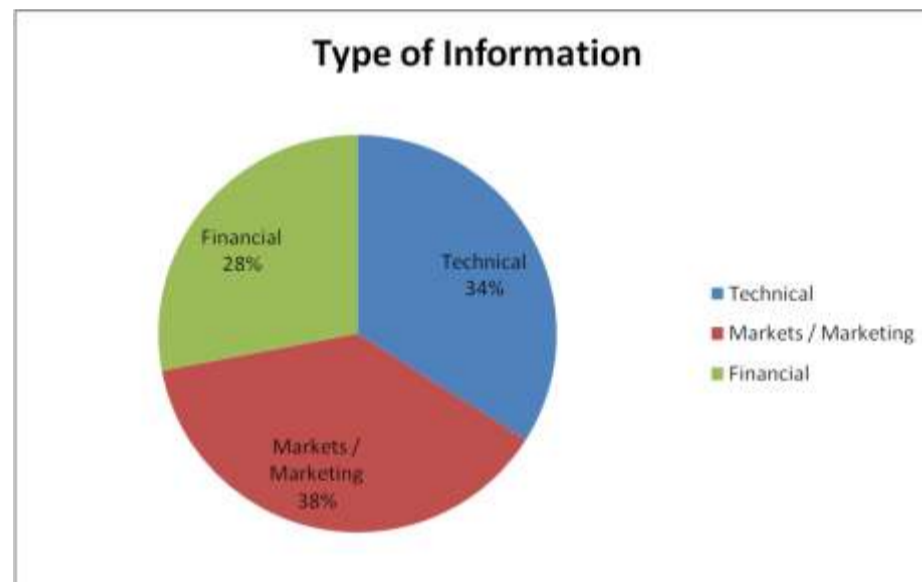


Figure 4 Type of Information Sought by Artisanal and Small Scale Miners

During the interviews conducted with the respondents, there was emphasis for government agencies in the county to offer support in terms of providing information and skills to support members in the community whose preoccupation is in mining. That this can be provided through established groups and associations already in existence in the county. It was also observed that information obtained did not adequately meet the needs of the small scale miners interviewed.

3.1.5 Support from Government

Figure 5 shows the survey results which indicates that 8 (45%) of the respondents believed that the government had a big role to play in terms of creating awareness in mining activities in the county. Respondents noted the need for the government to clarify on the planned creation of the Mining Act that would guide local community engaged in mining. This is in form of organizing education forums and involvement of the locals in areas where mining activities are undertaken, while 33 % of indicated the need for government and Non-Governmental Organizations in the region to support activities of the Artisanal and Small Scale Miners in the region. A total of 4 (22%) of the respondents recommended that Taita Taveta University College through the Department of Mining and Mineral Process Engineering (MMPE) should organize short courses for SSM at county level.

This shows that the mining community in Kenya are ignorant on mineral rights and their obligation as landowners as well as lack of promotion strategy for mining opportunities in the Country. There are also inadequate resources to undertake detailed geological surveys for the SSM to use in their prospection. Hence the need to have a clear and comprehensive national policy on mining for all stakeholders consistent with the National Economic Recovery Strategy, Vision 2030 and the Constitution of Kenya.

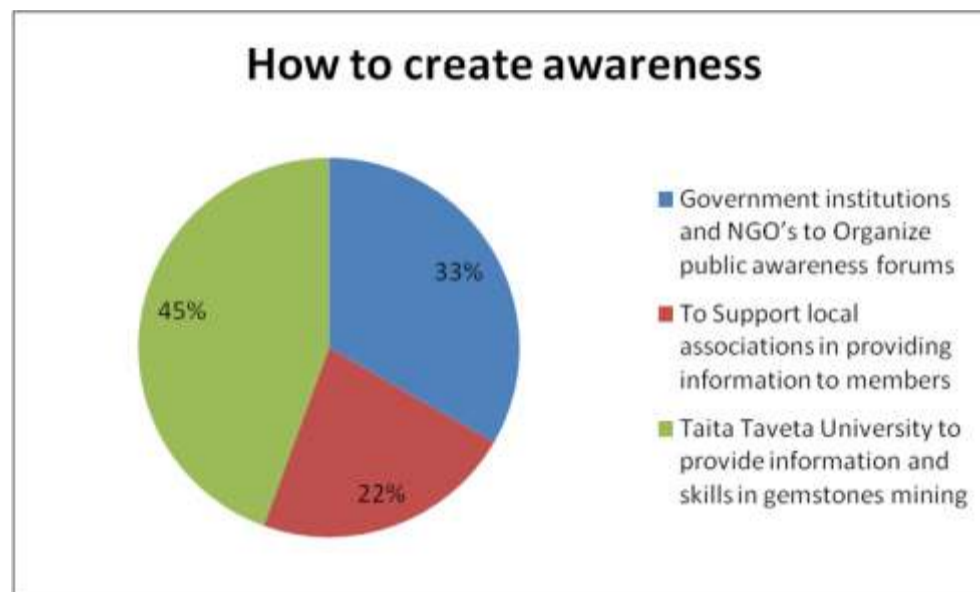


Figure 5 Awareness Creation

4.0 DISCUSSION

Results obtained through the study show that there is a dearth of information resources needed to support Small Scale Miners in Taita Taveta County. In a study on SSM, Hentschel (2003) shows that lack of knowledge as one of the impediments affecting small scale miners in the developing countries. Through this study, it emerged that there is an information gap to be bridged to enable the miners successfully conduct their activities. The mining sites are spread throughout the county with high presence in Wundanyi and Mwatate Districts. However, there is lack of information on mining bases where the resources can be found thereby making it difficult and expensive in time spent to identify suitable areas for mining. In a study on artisanal mining, Hinton, et al (2003) argues that lack of skills in determining of mineable reserves as one of the major challenges for artisanal and small scale miners.

Other challenges are brought about by obsolete or lack of legislation that recognize Small Scale Miners. This means mining activities may be conducted illegally without observing the laid down policies and procedures provided by the government. Studies in small scale mining show that investment in mining equipment is expensive and beyond the reach of the local communities in the rural areas. Ultimately, mining activities are conducted manually and without assurance of the mines in specific areas. This means a lot of time and human effort (man-hour) is wasted as the exercise is tiresome which, in most cases, leads to destruction of tracks of land using the trial and error method due to lack of information and skills required. In some cases, this may lead to environmental destruction and thereby making the area unusable for other productive activities by the local communities. A study by KARI (2007) shows that rural dwellers lack infrastructure to access basic information. Lack to information and necessary skills may result in destruction of the environment thereby making the areas unproductive or for use by local communities.

Registration and updating of SSM groups means that other stakeholders can recognize and/or form partnerships with the groups. Financial institutions may find it hard to recognize and provide credit these groups due to vulnerability and lack of recognition by relevant government agencies.

4.1 Summary of findings

There are organizations and groups formed by Small Scale Miners in the county which provide support to members. However, it was not established whether the mining groups are legally registered with the relevant government agencies. Majority of the SSM obtained information on mining and mining activities from employees of the Ministry of Environment and Natural Resources at the head office in Wundanyi District. There is need for the SSM to a central place where information related to mining can be easily obtained. Taita Taveta University College, a premier institution offering courses in mining to repack information and offer the necessary skills to support small scale miners in the county and at national level. Growth in mobile telephony and been reached many parts of the country. Majority of the miners interviewed had mobile phones. Taita Taveta University College has the capacity to develop a query database with relevant information and knowledge on mining activities where interested communities can obtain information services at a fee. The department of mining to capture and document local knowledge from the county which should be made available and easily accessible. The County Government can offer support by establishing Community Information Centres (CIC) so that equitable access to information is attained.

Apart from supporting the miners, these centres shall provide other important information to the community including health, education, Small Scale Farming as well as support women and youth groups to access to government services. This in turn will go along in aligning to the new Kenya Constitution (2010) that puts emphasis on the rights of access to information in order to actively participate in socioeconomic activities.

The government to support the growth in this sector by sponsoring seminars and workshops for interest groups. Through government sponsorship, TTUC University and other professional organizations with skills in mining and mineral processing can be contracted to identify and offer training and knowledge to support needy areas in this sector.

The government, through its investment organs, needs to support SSM in identifying and finding appropriate markets nationally and at international level. This would ensure that the small scale miners get maximum profits as opposed to using middlemen to sell their wares.

5.0 CONCLUSION

Progress and development in rural communities depends on the ability to access and use relevant information in their daily activities. SSM whose presence is in all the four districts of the County, is a basis for economic development, just like other sectors within the region. Access to relevant information and knowledge should be provided to inspire individuals in the community involved in mining to increase productivity. The Taita Taveta University College, an institution of higher learning in the county should take leadership by setting systems to capture, repackage, organize, and provide access to information and knowledge in this sector. Small scale mining activities in Taita Taveta County should be viewed as an opportunity for the local communities and should be valued for its social and economic significance. There is need to provide information to support the activities so that people involved in small scale mining at local level can operate openly and effectively. The new Mining Bill (2013) contains special provisions on the protection of the environment in order to achieve a socially acceptable balance between mining and physical, ecological and human environment. Another key objective of the new regulatory regime is to ensure that internationally accepted standards of health and environmental protection are observed by all participants in the mining sector. The regulatory regime for mining should be harmonized with existing NEMA's environmental legislation.

There is need to remove the barriers that presently deter and restrict small-scale mining to Kenyan citizens only and also establish specific mineral titles suited to small-scale mining, apart from streamlining regulation for dealers of precious minerals to prevent illicit dealings, and thereby secure fairer returns to small-scale miners. There is need to investigate better ways to facilitate access to finance and training of SSM in the County. Mitigation measures include the negative effects of small scale mining by improved planning for small-scale mining activity, through better community consultation concerning the designation of areas for small-scale mining; improved dissemination of information on health, safety and technology relating to small-scale mining; development occupational health and safety guidelines; and supervision of Environmental Impact Assessments (EIAs) in particular areas earmarked for large numbers of small scale mining like the case of Taita Taveta County. Information on accepted standards for mining and other related guidelines should be repackaged and made available to all stakeholders in this sector.

6.0 RECOMMENDATIONS

Taita Taveta University College (TTUC), with support of the County government to acquire and document information on small scale mining and make the resource available to all stakeholders. This should include technical, legal, environmental and marketing information among other disciplines.

TTUC to create a central database with a query facility where users and other stake holders can access information resources at a fee through mobile phones.

That Information Focal Points be established in the four districts to provide information to SSM and other areas including education, health and access to government services.

TTUC, through the Department of Library and Information services to organize information literacy seminars where stakeholders can acquire skills in finding and using information through various channels.

TTUC, through the Department of Mining and Mineral Processing to organize seminars and workshops for stakeholders in the mining sector for sharing knowledge, experiences and new developments.

Need to encourage registration of mining groups which in turn will support communication and coordination of activities and dissemination of best practices as outlined by the regulating authorities in the sector.

Establishment of clear and transparent rules and procedures to govern licensing of SSM, as currently covered in the Mining Bill 2014..

Establishment of a simplified, predictable and competitive fiscal regime that recognizes and supports small scale mining activities in the Counties.

Strengthening of mining promotion and regulatory agencies in Taita Taveta County.

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