

The Resilience of Mining Communities in Obuasi, as AngloGold Ashanti Shifts Position

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Abstract

A Flurry or an avalanche of publications examining the effects of mining on host communities have painted a rather incomplete picture of the abilities of these communities to cope with economic and population induced shocks and its ramifications not to mention their capacity to withstand the aftermath of the exhaustion of all economically valuable resources. In this paper, therefore, the concept on resource-community reliance is investigated. Obuasi the host community of the oldest mining site in Ghana is the case study. The study conducted a broad meta-analysis of all the types of capitals available in Obuasi that are essential to achieving resilience at the community level. The findings revealed Obuasi's ability to cope with the on-going stress and recover thereof appears daunting as the resources capable of placing the community in a better condition are not locally owned. Additionally, institutional inefficiencies and convergent thinking have exacerbated the problem. The paper recommends among other things the need for AGA to depart from the current handout dependent nature of its corporate social responsibility to one that promotes wealth creation. Obuasi Municipal Assembly on the other hand would have to be innovative and re-direct its energies towards preparing the Municipality to take advantage of the huge physical capital currently at its disposal.

Keywords: Obuasi, resilience, mining communities, development

1. Introduction

Many African countries rely on the mining industry as their largest contributor to national wealth (Darimani, Akabzaa, & Attuquayefio, 2013). In Ghana for instance, there has been a dramatic growth since the implementation of the Economic Recovery Program (ERP) in 1983 (Aryee, 2001; Hilson, 2004; Konadu-Agyemang, 2000; Britwum et al., 2001 in Wan, 2014). With an estimated 2,488 metric tons (80 million ounces) of gold produced between the first documentation of gold mining in 1493 and 1997 (Kesse, 1985; Ghana Chamber of Mines, 1998), gold has unsurprisingly surpassed cocoa and timber as Ghana's most important export commodity (Bloch and Owusu, 2012; Wan, 2014) and responsible for 45% of Ghana's total foreign currency (ibid). The mining industry however, by its very nature is a "foot print industry" (World Bank 2002) thus it leaves an environmental, social and economic impact wherever it finds itself. In light of that many researchers (eg. Wan, 2014; Appiah- Agyei, 2013; Ofosu-Mensah, 2011; Amponsah- Tawian & Dartey- Baah, 2011; Lahiri-Dutt, 2006) have interrogated the environmental and socio-economic impacts of mining activities on their host communities as a matter of justice of distribution, procedure, participation, and recognition. Many commentators (Akabzaa and Darimani, 2001; Hilson and Potter, 2005; Burgis, 2010; Konadu Agyemang and Adanu, 2003 in Wan, 2014) though recognised the gold "boom", but have critically argued that the economic benefits of gold mining have come at a cost, which are environmentally and socially devastating. This has resulted in many of the recent cases of conflicts between mining companies and communities (MIME Consult, 2002; ICMM, 2015; Lahiri-Dutt et al, 2006; OMA, 2013). Consequently, the mines have adopted the 'devil may care' attitude of using its Corporate Social Responsibility (CSR) programmes as a compensation for causing major devastation, (Jeckins & Obara, 2006; ICMM, 2007; 2015; Hope & Kwarteng, 2014). But interestingly, very little is known on what becomes of mining communities after the area has been exhausted of all economically valuable resources, especially how the resource-dependent communities would undergo economic and population restructuring as well as having the capacity to respond to such changes. The works of eg. Matarrita-Cascante and Trejos, (2013); Brown & Kulig, (1996/7); Steiner & Markantoni, (2013); Newman, 2013; Gibson and Klinch, (2005); and Stedman, et el (2004), were towards bridging the gap. This paper builds upon their preliminary findings and explores further some of the issues they raised in the Ghanaian context, where mining companies have succeeded in developing CSR programmes that maintain good will for the company and creates a long-term developmental culture of dependency on the part of host communities (Hilson and Potter, 2005; Jeckins & Obara, 2006; Hilson and Banchrigah, 2007; Hope & Kwarteng, 2014). In this paper, therefore, the applicability of the already developed concepts on resource-community reliance is investigated, with Obuasi the host community of the oldest mining site in Ghana as a case study. The objective is to draw lessons to inform alternative strategies to ensure the sustainability of mining communities in these times where the on-going restructuring and relocation of AngloGold Ashanti mine is likely to affect the fortunes of the dependent-communities. 'Communities with diverse capitals are considered to be more stable, productive and less vulnerable to external shocks' (Allen, Sheate and Diaz-Chavez, 2012 in Steiner & Markantoni, 2013), the study therefore conducts a broad meta-analysis of all the types of capitals available in Obuasi that are essential in

understanding resilience at the community level. The findings are benchmarked against the three key factors associated with community resilience as observed by Brown & Kulig, (1996/7); Kulig, (1996); Matarrita-Cascante & Trejos (2013) such as: local ownership of resources; residents' organizational capacities; and local institutional capacity to respond to change, to predict the resiliency of the mining communities in Obuasi.

2. Theoretical Overview

Community-Resilience Thesis

Resilience as a word has a long history with diverse and complex meanings (Wilson, 2012 in Steiner & Markantoni, 2013; Olsson et al, 2015;). In the socio-ecological systems (SESs) context, it is seen by interdisciplinary scientists as the ability of human communities to withstand external shocks or distresses to their infrastructure, such as environmental variability or social, economic or political upheaval, and to recover from such perturbations (Adger, 2000 in Olsson et al, 2015). 'As a theoretical framework it provides an explanation for how communities operate as collectives' (Kulig, Edge, & Joyce, 2008). Others attribute it to the ecology literature, citing Holling (1973) as the initial proponent (Ainuddin and Routray, 2012; Boon et al, 2012; Cutter et al, 2008 in Matarrita-Cascante and Trejos, 2013). In contemporary literature, it is used commonly to denote the responsive capacities of social systems or, more precisely, to return to some form of normal condition after a period of stress (Adger, 2000: 347 in Gibson and Klinch, 2005; Olsson et al, 2015; Norris et al, 2008; Wrigley and Dolega, 2011 in Matarrita-Cascante and Trejos, 2013). In the analysis of literature, resilience as a concept has been used to denote individual, social, and community resilience (Matarrita-Cascante and Trejos, 2013, Steiner & Markantoni, 2013). This paper however focus on community resilience, a concept used to explain a localized capacity to respond to disturbance, stress, or adverse situations (Norris et al, 2008 in Matarrita-Cascante and Trejos, 2013; Steiner & Markantoni, 2013).

Local communities are seen as the primary connection between individuals and society as well as a place where humans interact with the environment (Wilkinson 1991; Field and Burch 1988, Luloff and Krannich 2002 in Newman, 2013). They however, cannot control all the conditions that affect them, for example, the land ownership status or the industries that influence the local economy (Ahmed et al. 2004; Gibbon et al. 2002; Kusel and Fortmann 1991; Labonte and Laverack 2001 in Magis, (2010). In the views of Magis, 2010, communities develop resilience by actively exploring opportunities to increase capacity for thriving in an environment of change and uncertainty. Therefore, at the community level, resilience is about individual and community ability to respond to change (Ahmed et al. 2004; Gibbon et al. 2002; Healy et al. 2003 in Magis, 2010) and not about controlling all the conditions that affect communities. It is thus clear that resilience thinking focuses on important attributes such as the ability to cope with, and recover after, disturbance, shocks, and stress (Olsson et al, 2015; Steiner & Markantoni, 2013). That is, community resilience literature as adaptive capacity (Hegney et al., 2008 in Steiner & Markantoni, 2013) brings to bear the 'post-stressor capacities that allow social systems to either adapt (creating a new state) or return (to a pre-event state) to normal functioning capacity' (Ainuddin and Routray, 2012; Boon et al, 2012 cited by Matarrita-Cascante and Trejos, 2013).

Resource-dependent communities

Literature and anecdotal evidence give indication that the Resource dependent theory was formalized in the early 1980's by the publication of Pfeffer's Organizations and Organization Theory, and Scott's Organizations: Rational, Natural, and Open Systems, (Davis and Cobb, 2009), all of which were organizational structure inclined. Today, the theory has been used to examine the relationship between the resource areas and well-being (Stedman et al, 2004), Place-based policy (Olfert et al, 2010), livelihood assessment (Lax and Krug, 2013), economic and population restructuring (Matarrita-Cascante and Trejos, 2013; Brown & Kulig, 1996/7); Steiner & Markantoni, 2013; Newman, 2013; Gibson and Klinch, 2005) among others. Resource dependent communities have been observed as communities whose primary economic activities revolves around the utilization of natural resources such as mining, fisheries, agriculture, forestry, and tourism and recreation (Field and Burch, 1988; Matarrita-Cascante and Trejos, 2013). Though there have been considerable writings examining the local dependence on natural resources (often expressed in terms of employment opportunities and income, Stedman et al, 2004), there is an overwhelming evidence that communities that depend on natural resource extractions as economic driver suffer negative outcomes (Stedman et al, 2004; CAFOD. 2006; Jeckins & Obara, 2006). Nearly half of the world's poorest countries show this kind of dependency (Jeckins & Obara, 2006). 'Such high dependency on local natural resources has often placed resource-dependent communities in conditions of instability/susceptibility' (Flint and Luloff, 2005; Krannich and Luloff, 1991; Randall and Ironside, 1996 in Matarrita-Cascante and Trejos, 2013), with serious social problems, such as high levels of poverty, low levels of education, poor health care. Besides, mineral driven economies are vulnerable to fluctuations in

international prices and exchange rates (Jeckins & Obara, 2006; Hope & Kwarteng, 2014). This instability is further worsened when there is a 'shifts in resource demand dynamics (Flint and Luloff, 2005; Krannich and Luloff, 1991; Mekbebe et al, 2009; Randall and Ironside, 1996 in Matarrita-Cascante and Trejos, 2013. Several studies (eg. Deery et al, 2012; Kreag, 2001; Wall and Mathieson, 2006 cited by Matarrita-Cascante and Trejos, 2013), have depicted how resource-dependent communities have moved from extractive forms of sustenance to a tourism driven economy with dramatic shifts in local living conditions. Others such as Brown and Kulig (1996/7) and Kulig (1996) have discussed how a former coal-mining town in transition to becoming a tourist destination showed a remarkable level of success.

Narrowing the scope to "Mining communities", the Mining, Minerals and Sustainable Development Project (MMSD) report 'Breaking New Ground' (2002, cited by Jeckins & Obara 2006), defines three different types of mining communities. Households or families who derive all or most of their income from mining are occupational communities. 'Residential communities are those who live within the geographical area affected by mining and can have been in existence before the mine or have developed as a result of the mining operations'. Indigenous communities are households or families who hold allodial land ownership to where mining operation occurs or has an impact.

Jeckins & Obara (2006) identified a fourth type of mining community which co-exists with large-scale mining operations in their studies in the Western Region of Ghana. This is the artisanal or small-scale mining (galamsey¹) community. 'It is usually characterized by small, relatively unsophisticated operations using simple tools, little mechanization and lacking formal business arrangements or legal title to the sites extracted' (UN, 1996; Kambani, 2000; Hilson, 2002 in Jeckins & Obara 2006 pp 4). This type of community is on the ascendancy in Ghana, in that, "the activities of artisanal mine operators are today the backbone of Ghana's subsistence rural economy, consequently, becoming an unrivalled employment engine, providing hundreds of thousands of jobs to otherwise unemployed farmers, youths and nomads" (Hilson and Banchrigah, 2007) despite the human cost of galamseying (a lot of lives have been lost through illegal mining), environmental damage and the ills associated with this type of community. A recent study by Boa and Associates (2015) revealed that the three giant mining firms in the country; Goldfields Ghana Limited, Newmont Ghana and AngloGold Obuasi collectively contributed 34 percent of the country's total gold export for 2013, In the same vein, the overall 2013 gold contribution from small scale mining accounted for 34 percent of total production. The small scale mining sector is also credited as the largest producer of diamonds in Ghana since 2005 (Ofosu-Mensah, 2011).

Capitals Essential in Understanding Resilience at the Community Level

The Sustainable Livelihood Approach (SLA)/ Sustainable Livelihood Framework (SLF) assumes that people's livelihood is a set of five livelihood capitals/ or assets (Sayer and Campbell 2003, Kollmair 2002, Salafsky and Wollenberg 2000 in Lax and Krug, 2013). These are Financial Capital, Human Capital, Social Capital, Physical Capital and Natural Capital. Wilson (2012) pointed to the fact that economic, social and environmental capitals are the three types of capitals necessary to 'glue' communities together and are essential in understanding resilience at the community level. He explains that complex environmental transitions increasingly shape communities' abilities to respond and react to disturbances threatening their survival and thus, transition theory novel provides a suitable lens through which resilience pathways at community level can be better understood. Especially as transition theory allows detailed analysis of changes in community resilience over space and time based on different models of transitions and pathways of change. As a result, his book proposed a novel framework focused on a social science approach for understanding community resilience as the conceptual space at the intersection between economic, social and environmental capital. Based on the Sustainable Livelihood Approach (SLA)/ Sustainable Livelihood Framework (SLF), Wilson's transitions pathways of change and the assumption that resilient communities are characterized by well-developed economic, social and environmental capital (Bebbington and Perrault, 1999; Rigg, 2006; Bodin and Crona, 2008 in Wilson, 2012), the following working definitions were adopted.

- I. Economic Capital (Financial + Human Capital) : includes the financial resources available to people (savings, credit, remittances, Lax and Krug, 2013) and aggregate pool of skills and capabilities acquired through education and other forms of investment in people, Ford (2004) (eg. knowledge, skills, health and labour availability, Lax and Krug, (2013))

¹ Galamsey: a local acronym for illegal/ small scale unregulated mining activities. It was coined from three English words "gather and sell"

- II. Social Capital: refers to “the glue that holds groups and societies together and includes rules, norms, obligations, reciprocity, and trust embedded in social relations, social structures, and societies’ institutional arrangements (Ford 2004; Coleman, 1998; Clark and Carney 2008; Lax and Krug, 2013)
- III. Environmental Capital (Physical + Natural capital): the stock of environmentally provided assets such as soil, atmosphere, forests, minerals, water and wetlands and the stock of plant, equipment, infrastructure and other productive resources owned by individuals, the business sector or the country itself . (Ford 2004; Moser, 2006; Lax and Krug, 2013)

Availability of these diverse capitals in resource dependent-communities can contribute to creating a more stable and productive communities less vulnerable to external shocks’ (Steiner & Markantoni, 2013). In that, diverse capitals enable resource-dependent communities to successfully mobilize and respond to stress, which is essential for social sustainability (Beckley 1995; 2000; Doak and Kusel 1996; Harris et al. 2000; Miller et al. 1999 in Magis, 2010). The level of education, skills, and labour ability acquired by the individual can enable people to pursue different livelihood strategies in times of uncertainty, (Sayer and Campbell 2003; Magis, 2010). Adequate financial capital on the other hand enables people and communities to adapt to different livelihood strategies (Lax and Krug, 2013).

The Community Resilience Measurement Structure

The unavailability of universally agreed resilience measurement tool makes the concept problematic and subjective (Steiner & Markantoni, 2013; Kulig et el, 2008) in that; variables used by some authors are seen as outcome processes by some authors. Thus, situational and case-specific variables are highly use for measurements. Additionally, the differentiation in a set of cultural, locational and policy context makes the direct application of the normative perspectives inappropriate because local settings and socio-economic characteristics are essential in obtaining desire results (Steiner & Markantoni, 2013). Consequently, a mixed-method analytical framework is required (Steiner & Markantoni, 2013, Magis, 2010). Based on further readings on some of the existing resilience modules reviewed by Steiner & Markantoni, 2013 (see Table 1) and their application variables, the study borrowed the three resilience variables (local ownership of resources; residents’ organizational capacities; and local institutional capacity to respond to change) used by Brown & Kulig, (1996/7); Kulig, (1996); Matarrita-Cascante & Trejos (2013) as a framework for measurement because the study measures similar objectives in a different contextual certain.

Justifying the need for the chosen variables for measurement is the fact that the study is interested in measuring the ability of mining communities in Obuasi ‘to cope with, and recover after’, (Olsson et al, 2015; Steiner & Markantoni, 2013) the on-going stress or better still to thrive in this times of change and uncertainty (Magis, 2010). Local ownership of resources places the community in a better condition, in the light of changing circumstances (Varghese et al, 2006 in Matarrita-Cascante & Trejos, 2013), because “local ownership facilitates economic benefits [eg, increased multiplier effect, reduced leakages (Adger et al, 2005; Fillion, 1998; Krannich and Luloff, 1991; Varghese et al, 2006)] and non-economic benefits [eg, increased control/power over decision making, pride, sense of inclusion, responsibility” (Matarrita-Cascante & Trejos, 2013). The importance of citizen involvement in community decision making is much highlighted in literature, (Wan, 2014; Matarrita-Cascante & Trejos, 2013, Kulig et el, 2008, Newman, 2013; Jeckins & Obara, 2006}. Such participation ensures the mobilization of resources towards problem solving (Magis, 2010). “Particularly in the context of resource-dependent communities, organizational capacity is critical given the contribution that local knowledge and citizen input provide when designing and implementing strategies/policies that define natural resource usage, control, and distribution” (Matarrita-Cascante & Trejos, 2013). In the views of Kulig, et el, 2008, the presence of leaders and supporters or thinkers and doers; visionary leaders; access to resources and others with influence who are community minded, enthusiastic, creative, determined to “fight the fight,” knowledgeable about local resources and its interdependencies are characteristics identified as leading to resilience, at the community level. These in addition to institutional adaptability is critical for the community to receive economic and non-economic benefits, given how regulations and policies can define/redefine resource access, control, and usage and, thus, potentially mitigate the impacts of change, (Kulig et el, 2008; Matarrita-Cascante & Trejos, 2013; Brown & Kulig, (1996/7); Kulig, 1996).

Table 1: Selected resilience models, their strengths and shortcomings

Models of evaluating resilience	Strengths	Shortcomings
Building resilience in rural communities – eleven components of resilience (Hegney et al., 2008)	<ul style="list-style-type: none"> ✓ Various elements of community resilience ✓ Individual, group and community levels 	<ul style="list-style-type: none"> ✓ No quantification of community resilience ✓ Qualitative examples of community resilience not easily compared across communities
Measuring and modelling community resilience (Forgette and Boening, 2011)	<ul style="list-style-type: none"> ✓ Quantitative value of community resilience ✓ Measuring ‘change’ over time ✓ Compare resilience between different locations 	<ul style="list-style-type: none"> ✓ No clarification on how to collect data ✓ Resilience questions might be subjective
First Impression Community Exchange Programme (Centre for Community Economic Development, 2010)	<ul style="list-style-type: none"> ✓ ‘External and independent’ assessment of strengths/ shortcomings of villages ✓ Collaboration between similar communities ✓ Engages people who might bring change in their communities ✓ Evaluation is not expensive 	<ul style="list-style-type: none"> ✓ First impression (i.e. the core component of the concept) might not be accurate and can give wrong impression ✓ Recruitment of ‘first impressioners’ might be challenging ✓ Community members hesitant to hear critique ✓ Lack of follow-up phases
Five Ways to Wellbeing (Aked et al., 2010)	<ul style="list-style-type: none"> ✓ Universal target group ✓ Simplicity of the model 	<ul style="list-style-type: none"> ✓ Refers only to an individual level ✓ Does not quantify level of resilience ✓ Does not state how to collect data
Community resilience self-assessment (Magis, 2010)	<ul style="list-style-type: none"> ✓ Quantitative value of community resilience ✓ Easy method measuring ‘change’ in communities ✓ Enable resilience comparison between communities 	<ul style="list-style-type: none"> ✓ Data collection is based on key informants. Response might not be representative ✓ Subjectivity of key informants might lead to false results
Community capacity-building (Noya and Clarence, 2009)	<ul style="list-style-type: none"> ✓ Tangible outcomes (e.g. GDP) ✓ Measure aspect of change (e.g. unemployment rate) 	<ul style="list-style-type: none"> ✓ Difficult to access data at community level ✓ Changes might be observable only for a long period of time ✓ Difficult to prove source of outcomes ✓ Investigates largely economic aspects and omits social factors

Source: Steiner & Markantoni, (2013) page 413

3. Materials and Methods

This paper is based on a field study that was conducted in 2014 on the urban challenges facing Obuasi and how to effectively develop strategies aimed at addressing same and to chart a path for Obuasi’s sustainable future through urban planning and management. This data was updated in 2015 to capture the current state of the Obuasi in the face of the plummeting gold prices on the world market and the resultant decline in mining activities in Obuasi.

The study adopted the case study approach which allowed an empirical inquiry that investigated the phenomenon of impacts of mining on communities within its real-life context and was based on an in-depth investigation of how the activities affects the development and sustainability of communities in which they operate. Data used for this paper was obtained from both secondary and primary sources. Secondary data was obtained through a review of documents such as quarterly and annual reports as well as consultancy reports from some of the decentralized governmental institutions (publications from governmental and non-governmental sources) on mining activities in Ghana. The study area - Obuasi was purposively selected. Communities in Obuasi were put into clusters that were defined based on parameters such as areas those that exhibited slum characteristics; areas that were commercial by nature; indigenous communities; planned and resettled areas. From these clusters, a total of five communities were randomly drawn. A total of 500 households were selected for enumeration (at 8 percent margin of error) using convenience sampling method from the five selected communities namely: Obuasi Central; Abompekrom; Koffikrom; Sanso and Anyinam. The questionnaires were allocated to the five communities through a quota system. The response rate was 90 for the household data collection. Using purposive sampling method various institutions were also identified and interviewed. Data was collected from these institutions through face to face interviews using interview guides. These institutions include Obuasi Municipal Assembly, the Town and Country Planning Department, Survey Department, Department of Urban Roads, in addition to the above, key informants from AngloGold Ashanti, and service providers such as Ghana Water Company Limited, Electricity Company of Ghana and the Ghana Police Service were interviewed to enrich the data gathered. The data was organized and analyzed using qualitative methods which includes narratives and descriptive analysis.

4. Results and Discussions

The case of AngloGold Ashanti in Obuasi

The present day Obuasi is an integral traditional town of then Adanse State which was believed to emerge earlier than their one time vassals, Denkyira and Asante in the 12th century and known in Akan cosmogony as a place where God started creation (Reindorf, 1898, Ward, 1966 and Buah, 1980 cited in Ofosu-Mensah, 2011). Before the Europeans came to the Gold Coast in 1471, the people of Adanse were already mining gold. It is believed that from 1482 till the end of the sixteenth century, the Portuguese traded European goods for gold from Adanse (Arhin, 1978 in Ofosu-Mensah, 2011), thus the dependence on mineral resources for survival has long been established before the mine was commissioned in the nineteenth century.

Historically known as Ashanti Goldfields Corporation (AGC), AGC has been in operation since 1897 (Wan, 2014). The Obuasi mine (Ashanti Goldfields/AngloGold Ashanti) since 1898 have produced over 600 tons (18 million ounces) of gold (OMA, 2013). AngloGold Ashanti has a long track record as an active supporter of community projects with annual US\$0.7 million expenditure on social investment (ICMM, 2007). The company however is criticize for not doing enough with the element of the dissatisfaction relating to the lack of basic infrastructure in some parts of Obuasi as well as contributing to the rural economic diversification initiatives. For instance Wan in 2014, observed a contrasting positions at both the Municipal Assembly and the local community level. Whilst the Municipal Development Officer identified AGA as a major “stakeholder” in the development of Obuasi :

“Their contribution to our development is enormous. In 2011, AGA gave this Assembly 306,000 cedis (103,000 USD) and put money aside for school buildings. They paid a property rate of about 400,000 cedis (200,000 USD) last year”

a local mining activist held a different view:

“We realize as an Obuasi person, mining has been here for more than 130 years. Since the colonial days to now, the story has been the same. There has been nothing for the local people. There is no strategic development of Obuasi”. “Because gold mining is not conceived as fiscal planning and development, the towns are not properly structured and developed. Gold extraction is accompanied by a barrage of poverty”. (Wan, 2014 pg 39)

Though Wan (2014) observed a contrasting position, and trend of mining operations failing to benefit the local economy has been extensively highlighted in both literature and anecdotally, however, the contributions of the mines however cannot be overlooked. AGA is on record to have built the municipal hospital for the government, constructed local schools, provided free power to relocated communities in the Sansu area, built the town’s football stadium, and supported the provision of water infrastructure and electrification. This has however not been able to guarantee sustainable livelihoods. The environmental damage caused by mining results in the loss of land for other economic uses and the deprivation of livelihoods has created a chain of dependency on AngloGold

for survival. Communities, which are affected by mining operations, now depend on the social amenities provided by the mining companies such as water supply and sanitation facilities, library construction, and school scholarships for survival. This has led to what is described as “imposition of handout dependency” (see Jeckins & Obara 2006; Wan 2014) Since these services that are dependent on the mining company for funding or their continuous operation they disappear with the closure of the mine or withdrawal of the mining company from the area. This also impacts business activities and results in a shortfall in revenue the aftermath of which are already being felt with the current state of the AngloGold mine where many of their workers have moved to settle outside Obuasi Township. The Obuasi Municipal Assembly which is believed to generate 20 percent of its total revenue from property rate paid by AngloGold Ashanti alone faces a new challenge such as generating enough revenue and sustaining same to carry out its development mandate.

Measuring Resilience in Obuasi

Local Ownership of Resources;

Land is known to be a tradable commodity with high interest and value, and one has power to create capital through the possession of physical assets or land (Dale et. al. 2006). This is however daunting in an environment characterized by a disjointed and inefficiently managed property system like Obuasi. Obuasi unlike other places in Ghana where land is communally owned land in Obuasi has been alienated to AngloGold Ashanti (AGA). An interview with the Municipal Town Planning Officer described the situation:

“The Municipality has a large tract of land of (162.4km²), and about 95.1% is held by AngloGold Ashanti (AGA). The remaining land which translates to about 8km² is what is occupied by Obuasi and the other 62 communities that make the municipality. In effect some of the towns are sitting on the concession of the AGA. Access to land for any long term projects is thus a difficulty. AGA now releases land for prospective developers as and when it deems fit thereby affecting spatial development in the municipality”

The Obuasi Municipal Assembly has about Fifty-two percent (52%) of the population in the economically active labour force (117,887), 48% are classified as inactive. Out of the percentage of the active population, about 36% are employed whilst the rest are unemployed. With about 64% youth unemployment, over 25% of the populace get their source of livelihood from illegal mining activities, due to the fact that their lands have been appropriated by mining companies (Ofosu-Mensah, 2011). Without land for farming venturing into illegal mining for some has become an unavoidable livelihood option. This confirms the United Nations Industrial Development Organization’s (UNIDO) findings which suggests that joblessness and landlessness (resulting from large scale mining) often forced people into small-scale gold mining. At the communities’ level, Anyinam where household enumeration took place, home of AngloGold’s Kwasi Mensah Shaft, has a population of 6592 with 42% unemployed and has economically active population of 67%. It has a land area of 185.3 acres with 29% of land use development and physical expansion limited by AGA’s land holdings. Even though the inhabitants enjoy AGA’s paid electricity, residents are aggrieved by the lack of opportunities to realize their potentials. An interview with a youth representative in Anyinam revealed the following:

²“We don’t own anything in this community, our lands-AGA, our roads-AGA, our clinic and hospitals-AGA, electricity and water-AGA, almost everything here is for them, except the houses that we live in. so like you are saying if they leave this place permanently, there will be problems because we cannot meet our daily needs when there are no opportunities for us. We cannot even farm because our lands and rivers are already polluted”

The story is not different from what pertained in Koffikrom (3236 population size) with 36% unemployed; Obuasi central (14223) with 24% unemployed, a further 15% with cyclical employment; Sanso (10097) with 48% unemployed; Abombekrom (3340) with 32.6% unemployed. There is also little or no policies focus on creating jobs for the youth by providing requisite skills for self-employment. The economy of these communities is driven by the spillover effects of the mines which has resulted in commercial ventures; mainly informal economic activities of buying and selling (see Table 2), with agriculture which according to some researchers (eg. Ross 2001; Kasanga, 1997) is more sustainable relegated to the background. Agriculture is predominantly on subsistence basis in the Municipality employing less than 25% of the working population with about 90% of farm holdings being less than 2 hectares in size (OMA, 2013). Farming is not allowed in the concession areas unless authorized by the company. Even where permission is given the communities are constrained to cultivate seasonal crops such as maize, vegetables, cassava and plantain. They are not allowed to grow perennial or cash crops such as cocoa, palm and coffee due to the volatile nature of the mine plan. These crops would however be well supported in the area given the geophysical and soil attributes of the area.

² A youth representative in Anyinam who took part in the demonstration against AGA for deliberate power rationing in 2013

Table 2: Economic Activities of selected communities

Community/ Economic Activities	Anyinam N=82	Obuasi Central N=85	Abompekrom N=81	Koffikrom N=82	Sanso* N= 73
	%	%	%	%	%
Commerce	41.2	47.1	45.7	50	43.8
Mining and Industry	21.0	14.1	21.0	17	20.5
Services	32.8	34.1	27.1	30	28.8
Agriculture	5.0	4.7	6.2	3	4.1
Total	100	100	100	100	100

Source: SP4, 2014; *Field survey, 2015

This adversely affects the livelihoods of people whose productivity is seriously curtailed and, thus forcing them to continuously wallowing in abject poverty on a rich land of gold and suitable for agriculture.

Residents' Organizational Capacities to Respond to Changing

Similar to what was observed by Matarrita-Cascante & Trejos (2013), on the residents of Liberia in Costa Rica, interviewees though recognize the importance of working collaboratively for the benefit of the community; however there was a clear lack of interest on the part of residents to do so. Out of the 403 responses obtained across the five selected communities in Obuasi, only 63 respondents, representing 15.6% attested to have taken part in community related activities such as leadership and organization. A youth representative in Anyinam although acknowledges the indifference to organizations in his locality, he was quick to add that whenever there is a justifiable course to fight, it is easy to organized people, as he recounted how hundreds of residents were organized to embark on demonstration in 2013 against AGA for deliberate power ration. In Sanso, an opinion elder was quick to blame the breakdown of social structure and immigration.

Another observation was that, unlike what was observed in La Fortuna by Matarrita-Cascante & Trejos, (2013) where Fortunans believed that their capacity to achieve the desires of their community is building a community instead of just a locality, which resulted in the establishment of community-wide organizations, residents in Obuasi have no such umbrella organization towards community driven goals. Residents are interested in joining benefit oriented organizations such as fun clubs and politically motivated youth groups instead of community development associations. This however validates similar findings by Steiner & Markantoni, (2013) in their studies of rural regions of Scotland where individual social resilience was placed above community social resilience, individual economic resilience above community economic resilience. (see Steiner & Markantoni, 2013). The rationale is that people are interested in making their welfare optimum priority, which is normally achieved through a friendly and supportive groups or neighbourhoods. Nonetheless, some of the youth groups identified are invariably contributing to community good. In Anyinam, Fiifi Fun Club was identified to taking care of orphans whilst Nyame Nti Fun Club is the force that organised the demonstration against AGA for deliberate power ration. In Obuasi Central, though both Allaha Parliament and Doodo Parliament have no concrete evidence of taking any community initiative, anecdotal evidence points to the fact that they significantly helped in labour for the building of new pipes. In Sanso, Twe Wa Ni Fun Club was identified as taking care of broken pipes in the community. This sense of belonging and getting along identified among youth groups in neighbourhoods can significantly contribute to community adaptive strategies under a visionary leadership.

Local Institutional Capacity to Respond to Change

From an institutional perspective, resilience is dependent on the ability of local institutions to adapt in order to operate efficiently in the light of change (Matarrita-Cascante & Trejos, 2013; Kulig et al, 2008). Invariably, this task can be daunting for institutions with limited human, financial, and local and external political support as well as failing to be proactive.

In Ghana, the provisions of the legislations especially, the Local Government Act, Act 462 establishes the Metropolitan, Municipal and District Assemblies as the sole Planning Authorities at the district level (Oduro 2012). As spelt out by Act 480, their planning functions include: the preparation and implementation of district development plans (covering economic, social, spatial and environmental issues); preparation and implementation of settlement structure (land use) plans; budgeting (as part of plan implementation); authorization and approval of community and other sub-district plans; etc. Each District Assembly has two main planning agencies, the Town & Country Planning Department (T&CPD) and the District Planning Coordinating

Unit (DPCU). The rationale is to make planning more participatory. This coupled with visionary leadership, which is Future-oriented and community minded have the ability to adapt to any changing circumstances. The Obuasi Municipal Assembly as part of its rigorous measures to cope with the stress posed by the Anglo Gold Ashanti (AGA), recently commissioned lorry terminals with modern facilities. It is also on record to seeking to get a university campus, wood village for exhibition of local products, satellite markets and recreational centres, in a move to attract more investors. However, a recent panel workshop by the Natural Resource Governance Institute on the theme, Capturing Sub-National Revenues for Community Development reveals the development priorities and the quality of spending by the Municipal Assembly. For example, the construction of an entrance arches by the Municipal Assembly in 2007 at a cost of 89,000 cedis, (\$ 63,571.4 in 2007) whilst there are many deep potholes seen before one enters Obuasi makes analyst reflect whether the road is part of the concession earmark for surface mining. The discrepancies between what AngloGold Ashanti paid in 2010 as property rate to the Obuasi Municipal Assembly and what the assembly reported to have received raises many concerns.

The Municipal Assembly must therefore demonstrate ownership over its fate, ideally through the creation of a sustainability plan that recognizes the need to convert mineral revenues into long-term physical and human capital.

5. Summary of Findings and Conclusion

The locus of this study was to investigate the ability of mining communities in Obuasi 'to cope with, and recover after', the on-going stress or better still to thrive in these times of change and uncertainty.

Going by the measuring structure (ie local ownership of resources; residents' organizational capacities; and local institutional capacity to respond to change), it can be infer that the ability of Obuasi to cope with the ongoing stress and recover thereof appears daunting as resources capable of placing the community in a better condition, in the light of changing circumstances are not locally owned. This decreases the control/power over decision making, pride, sense of inclusion and the responsibility to initiate community problem-solving process.

Aside the institutional inefficiencies and convergent thinking, it was clear that "sense of community," which is achieved through collective unit and community togetherness is not evident in Obuasi. That notwithstanding, a sense of belonging and getting along was identified among youth groups and neighbourhoods and consequently, some actions occurring for community good. Such participation can ensure the mobilization of resources towards community adaptive strategies under a proactive leadership.

Resiliency is a process that can be influenced, thus the reverse of the current circumstances is likely to promote a stable and resilient community. The initiative must stem from the Obuasi Municipal Assembly which is mandated to do so under the 1992 constitution of Republic of Ghana, the Local Government Act, Act 462 and various pieces of legislations thereof. The Assembly must operate on the temerity of good governance in order to be successful as the lack of vision, convergent thinking, corruption and apathy towards community driven goals have been identified by Kulig et al, (2008) as barriers to community resilience.

The strategic plan of the Assembly can include among other things a co-operation between the Assembly and Anglo Gold Ashanti (Land Holders) in meeting adequate food supply. The study as a limitation could not undertake an extensive market survey on origin and destination of food stuffs in the market; however there exist an overwhelming evidence of limited land available for local food production within the municipality (AGA owns 95.1% of a total 162.4km² land area with farming not permitted in the concessions). The influx of migrants and booming of illegal mining activities have increased the cost of living making life unbearable for indigenes. This collaboration should encourage industrial farming among the natives in barren areas of the concessions instead of hunting down. The company can as part of their corporate social responsibilities acquire agricultural machinery and embark on large scale plantations that would employ the youth in their plantations rather than resorting to illegal mining. The assurance of a steady income generating job (i.e. on the plantation) would compel people to stop the dangerous galamsey work and go into paid plantation labourer jobs. Ghana is currently threatened to achieving sustainable Ghana by 2020 with the annual loss of 65,000 hectares forest land. This initiative invariably would significantly bridge the gap. Over time, the communities would learn how to take advantage of the opportunities offered by this sustainable venture to pull themselves up by their own bootstraps even if the mine ceases.

The Assembly's strategic plan can also consider converting some of the defunct shaft of AGA into mine tourism. Currently, tourism is the most promising sector of the national economy. In 2011, the sector received US\$2.18 million in receipts; contributed 6.9 per cent to GPD and employed over 300,000 Ghanaians directly and indirectly across the country (Ghana Tourist Board, 2012). Ackuayi et al (2014) presented that a total of Gh¢ 652,997.1 (\$ 192,057 based on 2014 exchange rate) was received as revenue from tourism in the Hohoe Municipality of Ghana between 2007 and 2011. Their study revealed that, tourism has contributed significantly to the growth and development of the local economy, development of infrastructure, employment and revenue generation in the Hohoe Municipality. It has also led to the conservation of the natural environment and

improving the growth of local businesses. Ghana's tourism currently runs on festivals, unique art, folklore and rich historical heritage. The introduction of commercial mine tourism, first of its kind, have the capacity to increase international visits and encourage local interest in tourism. It has the urge to preserve the mining heritage of Obuasi (as people will be interested to find out who was the first man to gain a mining concession in Obuasi; how a mine shaft looks like; what do miners do inside the shaft; how does a gold ore looks like, etc) and will have positive impacts on hotels, restaurants, retail establishment and transportation. If well managed, the intended positive ramifications would be able to sustain livelihoods with a more balanced form of growth.

6. References

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